search request (1) A. JIANG 554387

```
=> fil reg

COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.15       0.15

FILE 'REGISTRY' ENTERED AT 15:14:23 ON 14 NOV 2000
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STRUCTURE FILE UPDATES:   13 NOV 2000  HIGHEST RN 302776-13-2
DICTIONARY FILE UPDATES:  13 NOV 2000  HIGHEST RN 302776-13-2

TSCA INFORMATION NOW CURRENT THROUGH July 8, 2000

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Structure search limits have been increased.  See HELP SLIMIT
for details.

=> e phytostenol/cn 5

E1            1     PHYTOSPHINGOSINE, 1-PHOSPHATE/CN
E2            1     PHYTOSTANOL/CN
E3            0 --> PHYTOSTENOL/CN
E4            1     PHYTOSTEROLIN/CN
E5            1     PHYTOSTEROLS, ETHOXYLATED/CN

=> s e2; d ide can;

L1            1 PHYTOSTANOL/CN


L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2000 ACS
RN   127121-08-8  REGISTRY
CN   Phytostanol (9CI)  (CA INDEX NAME)
MF   Unspecified
CI   COM, MAN
SR   CA
LC   STN Files:   BIOBUSINESS, BIOSIS, CA, CAPLUS, TOXLIT, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
               6 REFERENCES IN FILE CA (1967 TO DATE)
               4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
               6 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE   1:  133:149763

REFERENCE   2:  132:127748

REFERENCE   3:  131:184219

REFERENCE   4:  130:68131
```

phytostenols

```
REFERENCE    5:  125:329276

REFERENCE    6:  113:106467


=> e

E6            1      PHYTOSTIMULIN/CN
E7            1      PHYTOSTREPTIN/CN
E8            1      PHYTOSULFOKINE .ALPHA./CN
E9            1      PHYTOSULFOKINE .BETA./CN
E10           1      PHYTOSULFOKINE-.ALPHA. (ORYZA SATIVA GENE PSK PRECURSOR)/CN
E11           1      PHYTOTON/CN
E12           1      PHYTOTOXIN (MYROTHECIUM RORIDUM)/CN
E13           1      PHYTOTOXIN PKZH 1 (VERTICILLIUM DAHLIAE PEPTIDE MOIETY
REDUC
                     ED)/CN
E14           1      PHYTOTOXIN PKZH 1 (VERTICILLIUM DAHLIAE PEPTIDE MOIETY
REDUC
                     ED) CYCLIC (6.FWDARW.9)-DISULFIDE/CN
E15           1      PHYTOTOXIN PKZH 1 (VERTICILLIUM DAHLIAE PEPTIDE MOIETY
REDUC
                     ED), CYCLIC (6.FWDARW.9)-DISULFIDE/CN
E16           1      PHYTOTOXIN PKZH 1 (VERTICILLIUM DAHLIAE PEPTIDE MOIETY)/CN
E17           1      PHYTOTROPINS/CN

=> e sitostenol/cn 5

E1            1      SITOSTANONE/CN
E2            1      SITOSTANYL P-COUMARATE/CN
E3            0 --> SITOSTENOL/CN
E4            1      SITOSTEROL/CN
E5            1      SITOSTEROL 3-O-(METHYL .BETA.-D-GLUCURONOPYRANOSIDE)/CN

=> s ?sitostenol?/cns

L2            0 ?SITOSTENOL?/CNS

=> s ?sitostanol?/cns

L3           22 ?SITOSTANOL?/CNS

=> s ?phytostenol?/cns

L4            0 ?PHYTOSTENOL?/CNS

=> s ?sitosterol?/cns

L5          174 ?SITOSTEROL?/CNS

=> s ?phytosterol?/cns

L6            5 ?PHYTOSTEROL?/CNS

=> s fatty acids
```

```
          7069 FATTY
          7409 ACIDS
L7        6120 FATTY ACIDS
                 (FATTY(W)ACIDS)

=> s glyceride/cn

L8           0 GLYCERIDE/CN

=> s ?glyceride?/cns

L9        1039 ?GLYCERIDE?/CNS

=> s (linoleic acid or linoleate)/cn

             1 LINOLEIC ACID/CN
             1 LINOLEATE/CN
L10          2 (LINOLEIC ACID OR LINOLEATE)/CN

=> e serum cholesterol/cn 5

E1           1     SERUM AND GLUCOCORTICOID-REGULATED PROTEIN KINASE (MOUSE
GEN
                   E SGK)/CN
E2           1     SERUM AND GLUCOCORTICOID-REGULATED PROTEIN KINASE
(ORYCTOLAG
                   US CUNICULUS STRAIN NEW-ZEALAND-WHITE RENAL CORTEX
COLLECTIN
                   G TUBULE GENE SGK)/CN
E3           0 --> SERUM CHOLESTEROL/CN
E4           1     SERUM GLOBULIN/CN
E5           1     SERUM GONADOTROPHIN/CN

=> s serum cholesterol

           646 SERUM
             1 SERUMS
            78 SERA
           724 SERUM
                 (SERUM OR SERUMS OR SERA)
          1645 CHOLESTEROL
L11          0 SERUM CHOLESTEROL
                 (SERUM(W)CHOLESTEROL)

=> fil medl,caplus,biosis,embase,wpids,jicst,conf,ntic

'NTIC' IS NOT A VALID FILE NAME
Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files
that are available.  If you have requested multiple files, you can
specify a corrected file name or you can enter "IGNORE" to continue
accessing the remaining file names entered.
ENTER A FILE NAME OR (IGNORE):ntis

COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                ENTRY     SESSION
```

```
FULL ESTIMATED COST                                  53.49      53.64

FILE 'MEDLINE' ENTERED AT 15:17:38 ON 14 NOV 2000

FILE 'CAPLUS' ENTERED AT 15:17:38 ON 14 NOV 2000
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COPYRIGHT (C) 2000 BIOSIS(R)

FILE 'EMBASE' ENTERED AT 15:17:38 ON 14 NOV 2000
COPYRIGHT (C) 2000 Elsevier Science B.V.  All rights reserved.

FILE 'WPIDS' ENTERED AT 15:17:38 ON 14 NOV 2000
COPYRIGHT (C) 2000 DERWENT INFORMATION LTD

FILE 'JICST-EPLUS' ENTERED AT 15:17:38 ON 14 NOV 2000
COPYRIGHT (C) 2000 Japan Science and Technology Corporation (JST)

FILE 'CONF' ENTERED AT 15:17:38 ON 14 NOV 2000
COPYRIGHT (c) 2000 FIZ Karlsruhe

FILE 'NTIS' ENTERED AT 15:17:38 ON 14 NOV 2000
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=> s (l1 or l3 or l5 or l6 or ?phytoste#ol? or ?sitoste#ol? or ?sitosta#ol?)

TRUNCATION COMBINATION NOT VALID '?PHYTOSTE#OL?'
TRUNCATION COMBINATION NOT VALID '?PHYTOSTE#OL?'
TRUNCATION COMBINATION NOT VALID '?PHYTOSTE#OL?'
TRUNCATION COMBINATION NOT VALID '?PHYTOSTE#OL?'
TRUNCATION COMBINATION NOT VALID '?PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
The truncation symbol # may be used only at the end of a search term.
To specify a variable character within a word use '!', e.g., 'wom!n'
to search for both 'woman' and 'women'.  Enter "HELP TRUNCATION" at an
arrow prompt (=>) for more information.

=> s (l1 or l3 or l5 or l6 or phytoste#ol? or sitoste#ol? or sitosta#ol?)

'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
'#' TRUNCATION SYMBOL NOT VALID WITHIN 'PHYTOSTE#OL?'
The truncation symbol # may be used only at the end of a search term.
To specify a variable character within a word use '!', e.g., 'wom!n'
```

to search for both 'woman' and 'women'. Enter "HELP TRUNCATION" at an arrow prompt (=>) for more information.

```
=> s (l1 or l3 or l5 or l6 or phytoste!ol? or sitoste!ol? or sitosta!ol?)

L12       1798 FILE MEDLINE
L13      11957 FILE CAPLUS
L14       3883 FILE BIOSIS
L15       2534 FILE EMBASE
LEFT TRUNCATION IGNORED FOR '?SITOSTANOL?' FOR FILE 'WPIDS'
LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'WPIDS'
LEFT TRUNCATION IGNORED FOR '?PHYTOSTEROL?' FOR FILE 'WPIDS'
L16        563 FILE WPIDS
L17        242 FILE JICST-EPLUS
'CN' IS NOT A VALID FIELD CODE
'CNS' IS NOT A VALID FIELD CODE
LEFT TRUNCATION IGNORED FOR '?SITOSTANOL?' FOR FILE 'CONF'
LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'CONF'
LEFT TRUNCATION IGNORED FOR '?PHYTOSTEROL?' FOR FILE 'CONF'
L18          1 FILE CONF
'CN' IS NOT A VALID FIELD CODE
'CNS' IS NOT A VALID FIELD CODE
LEFT TRUNCATION IGNORED FOR '?SITOSTANOL?' FOR FILE 'NTIS'
LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'NTIS'
LEFT TRUNCATION IGNORED FOR '?PHYTOSTEROL?' FOR FILE 'NTIS'
L19         11 FILE NTIS

TOTAL FOR ALL FILES
L20      20989 (L1 OR L3 OR L5 OR L6 OR PHYTOSTE!OL? OR SITOSTE!OL? OR
SITOSTA!
               OL?)
```

Left truncation is not valid in the specified search field in the specified file. The term has been searched without left truncation. Examples: '?TERPEN?' would be searched as 'TERPEN?' and '?FLAVONOID' would be searched as 'FLAVONOID.'

If you are searching in a field that uses implied proximity, and you used a truncation symbol after a punctuation mark, the system may interpret the truncation symbol as being at the beginning of a term. Implied proximity is used in search fields indexed as single words, for example, the Basic Index.

```
=> s 20 and (17 or fatty acids or d2.241.81.407/ct or d10.516.251/ct)
<------User Break------>
u
SEARCH ENDED BY USER

=> s l20 and (17 or fatty acids or d2.241.81.407/ct or d10.516.251/ct)

L21        166 FILE MEDLINE
L22       2099 FILE CAPLUS
L23        376 FILE BIOSIS
L24         96 FILE EMBASE
L25         52 FILE WPIDS
L26         29 FILE JICST-EPLUS
'CT' IS NOT A VALID FIELD CODE
```

P

L1 & L2

Phytoste

```
L27           0 FILE CONF
L28           3 FILE NTIS

TOTAL FOR ALL FILES
L29        2821 L20 AND (L7 OR FATTY ACIDS OR D2.241.81.407/CT OR
D10.516.251/CT
                )

=> s l29 and (glyceride? or l9 or d10.516.351/ct or monoacylglycerols)

L30           9 FILE MEDLINE
L31         429 FILE CAPLUS
L32          31 FILE BIOSIS
L33           4 FILE EMBASE
LEFT TRUNCATION IGNORED FOR '?GLYCERIDE?' FOR FILE 'WPIDS'
L34           6 FILE WPIDS
L35           5 FILE JICST-EPLUS
'CNS' IS NOT A VALID FIELD CODE
'CT' IS NOT A VALID FIELD CODE
LEFT TRUNCATION IGNORED FOR '?GLYCERIDE?' FOR FILE 'CONF'
L36           0 FILE CONF
'CNS' IS NOT A VALID FIELD CODE
LEFT TRUNCATION IGNORED FOR '?GLYCERIDE?' FOR FILE 'NTIS'
L37           0 FILE NTIS

TOTAL FOR ALL FILES
L38         484 L29 AND (GLYCERIDE? OR L9 OR D10.516.351/CT OR
MONOACYLGLYCEROLS
                )
Left truncation is not valid in the specified search field in the
specified file.  The term has been searched without left truncation.
Examples: '?TERPEN?' would be searched as 'TERPEN?' and '?FLAVONOID'
would be searched as 'FLAVONOID.'

If you are searching in a field that uses implied proximity, and you
used a truncation symbol after a punctuation mark, the system may
interpret the truncation symbol as being at the beginning of a term.
Implied proximity is used in search fields indexed as single words,
for example, the Basic Index.

=> s l38 and (carboxylic(a)acid? or d2.241/ct)

L39           0 FILE MEDLINE
L40          15 FILE CAPLUS
L41           1 FILE BIOSIS
L42           0 FILE EMBASE
L43           1 FILE WPIDS
L44           4 FILE JICST-EPLUS
'CT' IS NOT A VALID FIELD CODE
L45           0 FILE CONF
L46           0 FILE NTIS

TOTAL FOR ALL FILES
L47          21 L38 AND (CARBOXYLIC(A) ACID? OR D2.241/CT)

=> s l47 and (linoleic acid or l10 or linoleate or (d2.241.81.436.390 or
d10.516.251.355.432 or d10.516.251.355.310.515)/ct)
```

```
L48           0 FILE MEDLINE
L49           4 FILE CAPLUS
L50           0 FILE BIOSIS
L51           0 FILE EMBASE
L52           0 FILE WPIDS
L53           2 FILE JICST-EPLUS
'CN' IS NOT A VALID FIELD CODE
'CT' IS NOT A VALID FIELD CODE
L54           0 FILE CONF
'CN' IS NOT A VALID FIELD CODE
L55           0 FILE NTIS

TOTAL FOR ALL FILES
L56           6 L47 AND (LINOLEIC ACID OR L10 OR LINOLEATE OR
(D2.241.81.436.390
                OR D10.516.251.355.432 OR D10.516.251.355.310.515)/CT)

=> dup rem l56

DUPLICATE IS NOT AVAILABLE IN 'CONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L56
L57           6 DUP REM L56 (0 DUPLICATES REMOVED)

=> d 1-6 cbib abs hit


L57  ANSWER 1 OF 6  CAPLUS  COPYRIGHT 2000 ACS
1999:750672   Document No. 132:77784  Avocado oil. Evolution of lipid
     components during ripening of the fruits of some cultivars grown in
     Southern Italy.  Poiana, M.; Giuffre, A. M.; Mincione, B.; Giuffre, F.
     (Istituto di Microbiologia e Tecnologia Agraria e Forestale, Universita
     degli studi di Reggio Calabria, Italy).  Riv. Ital. Sostanze Grasse,
     76(6), 257-275 (Italian) 1999.  CODEN: RISGAD.  ISSN: 0035-6808.
     Publisher: Stazione Sperimentale per le Industrie degli Oli e dei Grassi.
AB   The ripening of avocado fruits of the Bacon, Hass, and Reed cultivars
     grown in 3 areas of Southern Italy was studied.  The oil produced from
     fruits harvested in several stages of ripening and its biol. stability
     were studied.  The fruit pulp chem. compn. was examd. and the extd. oil
     was analyzed.  The compn. of triglycerides, fatty acids
     , sterols, and tocopherols was detd.  The Bacon and Hass cultivars showed
     good oil yields and good oil stability.
AB   The ripening of avocado fruits of the Bacon, Hass, and Reed cultivars
     grown in 3 areas of Southern Italy was studied.  The oil produced from
     fruits harvested in several stages of ripening and its biol. stability
     were studied.  The fruit pulp chem. compn. was examd. and the extd. oil
     was analyzed.  The compn. of triglycerides, fatty acids
     , sterols, and tocopherols was detd.  The Bacon and Hass cultivars showed
     good oil yields and good oil stability.
ST   avocado ripening oil glyceride fatty acid sterol tocopherol
IT   Fats and Glyceridic oils, analysis
     RL: AMX (Analytical matrix); ANST (Analytical study)
        (avocado; glyceride, fatty acid, sterol and tocopherol compn.
        of avocado oil in relation to fruit ripening stage in 3 cultivars
grown
```

in Southern Italy)
IT Growth and development, plant
(fruit ripening; **glyceride**, fatty acid, sterol and tocopherol compn. of avocado oil in relation to fruit ripening stage in 3 cultivars grown in Southern Italy)
IT Avocado
(**glyceride**, fatty acid, sterol and tocopherol compn. of avocado oil in relation to fruit ripening stage in 3 cultivars grown in
Southern Italy)
IT **Carboxylic acids**, biological studies
Carotenes, biological studies
Chlorophylls, biological studies
Fatty acids, biological studies
Glycerides, biological studies
Lipids, biological studies
Mineral elements, biological studies
Sterols
Tocopherols
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(**glyceride**, fatty acid, sterol and tocopherol compn. of avocado oil in relation to fruit ripening stage in 3 cultivars grown in
Southern Italy)
IT Oxidation
(lipid; **glyceride**, fatty acid, sterol and tocopherol compn. of avocado oil in relation to fruit ripening stage in 3 cultivars grown
in Southern Italy)
IT Carbohydrates, biological studies
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(reducing sugars; **glyceride**, fatty acid, sterol and tocopherol compn. of avocado oil in relation to fruit ripening stage in
3 cultivars grown in Southern Italy)
IT 57-10-3, Hexadecanoic acid, biological studies 57-11-4, Octadecanoic acid, biological studies 57-88-5, Cholesterol, biological studies 59-02-9, .alpha. Tocopherol **60-33-3**, **Linoleic acid**, biological studies **83-45-4**, **Sitostanol** **83-46-5**, .beta.-**Sitosterol** 83-48-7, Stigmasterol 112-80-1, Oleic acid, biological studies 112-85-6, Behenic acid **122-32-7**, Triolein 148-03-8, .beta. Tocopherol 373-49-9, Palmitoleic acid 463-40-1, Linolenic acid 474-60-2, Campestanol 474-62-4, Campesterol 474-63-5, 24-Methylenecholesterol 506-12-7, Heptadecanoic acid 506-30-9, Arachic acid 516-78-9, .DELTA.7-Campesterol **537-40-6** 544-63-8, Tetradecanoic acid, biological studies **555-44-2**, Tripalmitin 557-59-5, Lignoceric acid 2364-23-0, Clerosterol 6869-99-4, .DELTA.7-Stigmastenol 7616-22-0, .gamma. Tocopherol **14465-68-0** 18472-36-1, .DELTA.5-Avenasterol **20246-55-3** 23290-26-8, .DELTA.7-Avenasterol **26836-30-6** **26836-35-1** **26836-36-2** **26836-37-3** **27071-84-7** 28040-00-8 **28409-91-8** **28409-94-1** **28630-67-3** **28880-78-6** 28933-89-3, Eicosenoic acid 28949-66-8 **29589-86-4** **29661-35-6** 38703-17-2 38703-23-0 82181-49-5 **87973-00-0** **125547-89-9** 125547-91-3

RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(**glyceride**, fatty acid, sterol and tocopherol compn. of avocado oil in relation to fruit ripening stage in 3 cultivars grown in Southern Italy)

L57 ANSWER 2 OF 6 JICST-EPlus COPYRIGHT 2000 JST
900402115 Chemical composition of lipids, especially triacylglycerol, in grape seeds.. OHNISHI M; ITO S; FUJINO Y; HIROSE S; KAWAGUCHI M. Obihiro Univ. Agriculture and Veterinary Medicine, Obihiro, JPN; Tokachi-Ikeda Research Inst. Viticulture and Enology, Hokkaido, JPN. Agric Biol Chem. (1990) vol. 54, no. 4, pp. 1035-1042. Journal Code: G0021A (Fig. 1, Tbl. 9, Ref. 24) CODEN: ABCHA6; CODEN: 0002-1369; Pub. Country: Japan. Language: English.

AB Total lipids were extracted from five varieties of grape seeds and systematically analyzed for their chemical compositions. The yields of the total lipids were 10-16%, and triacylglycerol(TG) usually amounted to c. 90% of the whole. From a reversed-phase high-performance liquid chromatographic analysis, the major molecular species of TG were shown to be trilinolein (40%), oleoyldilinolein (21%) and palmitoyldilinolein (18%). The component **fatty acids** were asymmetrically distributed at C-1 and C-3 of the TG molecule. Palmitic acid was exclusively located at the C-1 position, although unsaturated **fatty acids**, especially **linoleic acid**, were predominant at the C-1 position, as at the C-2 and C-3 positions. Compared with TG, higher proportions of palmitic and linolenic acids were generally observed in thirteen other lipid classes isolated from grape seeds, although the fatty acid compositions of the diacylglycerol and free **fatty acids** were roughly identical with that of TG. As component sterols, **sitosterol**, campesterol and stigmasterol, especially the former, were predominant. Their relative proportions were somewhat different from each other between the neutral and polar sterol lipids. (author abst.)
AB Total lipids were extracted from five varieties of grape seeds and systematically analyzed for their chemical compositions. The yields of the total lipids were 10-16%, and triacylglycerol(TG) usually amounted to c. 90% of the whole. From a reversed-phase high-performance liquid chromatographic analysis, the major molecular species of TG were shown to be trilinolein (40%), oleoyldilinolein (21%) and palmitoyldilinolein (18%). The component **fatty acids** were asymmetrically distributed at C-1 and C-3 of the TG molecule. Palmitic acid was exclusively located at the C-1 position, although unsaturated **fatty acids**, especially **linoleic acid**, were predominant at the C-1 position, as at the C-2 and C-3 positions. Compared with TG, higher proportions of palmitic and linolenic acids were generally observed in thirteen other lipid classes isolated from grape seeds, although the fatty acid compositions of the diacylglycerol and free **fatty acids** were roughly identical with that of TG. As component sterols, **sitosterol**, campesterol and stigmasterol, especially the former, were predominant. Their relative proportions were somewhat different from each other between the neutral and polar sterol lipids. (author abst.)

CT grape; seed; triglyceride; fatty acid composition; breed specificity; vegetable fats and oils; wine making; vitamin F; polyene; aliphatic **carboxylic acid**; unsaturated **carboxylic acid**; olefin compound; diene
BT edible fruit; garden crop; crop(agriculture); agricultural food; food; Vitaceae; Choripetalae; Dicotyledoneae; Angiospermae; Phanerogamae; plant(organism); plant organ; **glyceride**; carboxylate(ester); ester; lipid; aliphatic alcohol; alcohol; hydroxy compound; chemical composition; composition(constitution); biological comparison; comparison; fats and oils; oils; fermented food production; food processing; working and processing; fatty acid; **carboxylic acid**; fat-soluble vitamin; vitamin

L57 ANSWER 3 OF 6 JICST-EPlus COPYRIGHT 2000 JST
900578062 Compositions of lipid classes, **fatty acids** and sterols in domestic rye grains.. MANO YASUO; ONISHI MASAO; SATO HARUHIKO; NAKANISHI HAJIME; MAEMOTO MASAMICHI; ITO SEISUKE.
Obihirootanitankidaigaku; Obihiro Univ. of Agriculture and Veterinary Medicine. Nippon Shokuhin Kogyo Gakkaishi (Journal of Japanese Society of Food Science and Technology). (1990) vol. 37, no. 5, pp. 338-345. Journal Code: F0895A (Tbl. 7, Ref. 21) CODEN: NSKGAX; CODEN: 0029-0394; Pub. Country: Japan. Language: Japanese.
AB Total lipids were extracted from four varieties of domestic rye grains, and their lipid class compositions, the component **fatty acids** and sterols were investigated. The yields of the total lipids were 1.6-1.9%. The neutral lipid fraction usually amounted to about 70% of the whole, in which triacylglycerol was predominant. The ratio of the glycolipid and phospholipid fractions was approximately 1:1.4; the principal lipid classes were diglycosyldiacylglycerol, monoglycosyldiacylglycerol and cerebroside in the former group, and phosphatidylcholine, phosphatidylethanolamine, phosphatidylinositol and lysophosphatidylcholine in the latter one. The main **fatty acids** in nine lipid classes were generally linoleic, palmitic, oleic and linolenic acids in the decreasing order, except for acylsterol, in which the most abundant one was palmitic acid. The relative proportions of **linoleic acid** were 55-60% in triacylglycerol, 65-79% in two glyceroglycolipids and 41-68% in phospholipid classes. Seven types of 4-desmethylsterols were detected, among which **sitosterol** and campesterol, particularly the former one, were predominant in neutral and polar sterol lipids. No significant differences were recognized in the chemical compositions of the rye grain lipids among the varieties harvested in Hokkaido, Japan. (author abst.)
TI Compositions of lipid classes, **fatty acids** and sterols in domestic rye grains.
AB Total lipids were extracted from four varieties of domestic rye grains, and their lipid class compositions, the component **fatty acids** and sterols were investigated. The yields of the total lipids were 1.6-1.9%. The neutral lipid fraction usually amounted to about 70% of the whole, in which triacylglycerol was predominant. The ratio of

the glycolipid and phospholipid fractions was approximately 1:1.4; the principal lipid classes were diglycosyldiacylglycerol, monoglycosyldiacylglycerol and cerebroside in the former group, and phosphatidylcholine, phosphatidylethanolamine, phosphatidylinositol and lysophosphatidylcholine in the latter one. The main **fatty acids** in nine lipid classes were generally linoleic, palmitic, oleic and linolenic acids in the decreasing order, except for acylsterol, in which the most abundant one was palmitic acid. The relative proportions of **linoleic acid** were 55-60% in triacylglycerol, 65-79% in two glyceroglycolipids and 41-68% in phospholipid classes. Seven types of 4-desmethylsterols were detected, among which **sitosterol** and campesterol, particularly the former one, were predominant in neutral and polar sterol lipids. No significant differences were recognized in the chemical compositions of the rye grain lipids among the varieties harvested in Hokkaido, Japan. (author abst.)

CT Secale cereale; Hokkaido; cultivar; lipid; fatty acid composition; plant sterol; triglyceride; aliphatic **carboxylic acid**; rye flour

BT cereal; agricultural food; food; common crop; crop(agriculture); Secale; Gramineae; Monocotyledoneae; Angiospermae; Phanerogamae; plant(organism); Japan; East Asia; Asia; breed; chemical composition; composition(constitution); sterol; steroid; derived lipid; **glyceride**; carboxylate(ester); ester; aliphatic alcohol; alcohol; hydroxy compound; **carboxylic acid**; cereal flour; processed cereal product

L57 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2000 ACS

1990:213906 Document No. 112:213906 Lipids of oleaster fruits. Goncharova, N. P.; Glushenkova, A. I. (Inst. Khim. Rastit. Veshchestv, Tashkent, USSR). Khim. Prir. Soedin. (1), 17-21 (Russian) 1990. CODEN: KPSUAR. ISSN: 0023-1150.

AB Lipids were examd. in the seeds and pericarp of 3 morphol. forms of oleaster (Elaeagnus angustifolia). **Linoleic acid** was the major fatty acid in the seed oil (.ltoreq.59.1% of the triglyceride fraction). Principal **fatty acids** in the pericarp were palmitic, oleic, and linoleic. .beta.-**Sitosterol** was the major sterol. Nonacosane accounted for >55% of the alkanes in both seeds and pericarp.

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IT Alkanes, biological studies
Fatty acids, biological studies
Glycerides, biological studies
Glycolipids
Lipids, biological studies
RL: BIOL (Biological study)
(of oleaster fruits and seeds)

IT Triterpenes and Triterpenoids

RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(**carboxylic acids**, of oleaster fruits)

IT **Glycerides**, biological studies
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(epoxy, of oleaster seeds)

IT **Fatty acids**, esters
RL: BIOL (Biological study)
(esters, of oleaster fruits and seeds)

IT **Carboxylic acids**, biological studies
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(triterpenoid, of oleaster fruits)

IT 57-10-3, Hexadecanoic acid, biological studies 57-11-4, C18:0, biological studies **60-33-3**, 9,12-Octadecadienoic acid (Z,Z)-, biological studies 112-80-1, 9-Octadecenoic acid (Z)-, biological studies 143-07-7, Dodecanoic acid, biological studies 334-48-5, Decanoic acid 506-12-7, Heptadecanoic acid 544-63-8, Tetradecanoic acid, biological studies 1002-84-2, Pentadecanoic acid 27213-43-0 28039-99-8
RL: BIOL (Biological study)
(of oleaster fruit and seeds)

IT **83-46-5** 112-95-8, Eicosane 593-45-3, Octadecane 593-49-7, Heptacosane 629-92-5, Nonadecane 629-94-7, Heneicosane 629-97-0, Docosane 629-99-2, Pentacosane 630-01-3, Hexacosane 630-02-4, Octacosane 630-03-5, Nonacosane 630-04-6, Hentriacontane 638-67-5, Tricosane 638-68-6, Triacontane 646-31-1, Tetracosane 2363-71-5, Heneicosanoic acid 2433-96-7, Tricosanoic acid 28929-01-3 31152-46-2
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(of oleaster fruits)

L57 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2000 ACS

1984:588239 Document No. 101:188239 Effects of sour rot on the composition of the lipid fraction of different parts of grape berries (Vitis vinifera cv. Fortana). Zironi, R.; Frega, N.; Conte, L. S.; Lercker, G. (Cent. Ric. Vitic. Enol., Univ. Bologna, Bologna, 40126, Italy). Vitis, 23(2), 93-105 (French) 1984. CODEN: VITIAY. ISSN: 0042-7500.

AB As compared with healthy grape berries of V. vinifera cv. Fortana, the berries infected with sour rot showed a higher lipid content of the pulp including the skin and a lower lipid content of the seeds. In the seeds from healthy and diseased berries, no difference in fatty acid compn. was obsd., whereas the pulp and skin from infected berries had a higher content of **fatty acids** with <18 C atoms than did the pulp of healthy berries. An increased oleic and a decreased **linoleic acid** content was found in the pulp of infected as compared to that of healthy berries. The former showed also a higher ratio between unsatd. and satd. **fatty acids**. In the pulp and skin oleanolic aldehyde, oleanolic acid, and erythrodiol were detected. The level of the latter was higher in pulp from infected than from healthy berries.

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IT **Fatty acids**, biological studies
Glycerides, biological studies
Lipids, biological studies
RL: BIOL (Biological study)
(of grapevine parts, sour rot disease effect on)

IT Terpenes and Terpenoids, biological studies
RL: BIOL (Biological study)
(**carboxylic acids**, of grapevine parts in sour disease)

IT Alcohols, biological studies
Carboxylic acids, biological studies
RL: BIOL (Biological study)
(terpenoid, of grapevine parts in sour disease)

IT **83-46-5** 83-48-7 474-62-4 545-46-0 545-48-2 6869-99-4 17605-67-3 18472-36-1
RL: BIOL (Biological study)
(of grape vine parts in sour rot disease)

IT 57-10-3, biological studies 57-11-4, biological studies 57-88-5, biological studies **60-33-3**, biological studies 111-02-4 112-80-1, biological studies 112-85-6 143-07-7, biological studies 373-49-9 463-40-1 506-12-7 506-30-9 506-38-7 506-46-7 506-48-9 506-50-3 508-02-1 511-61-5 544-63-8, biological studies 544-64-9 557-59-5 559-70-6 1449-09-8 2363-71-5 2433-96-7 3625-52-3 4250-38-8 4657-58-3 7138-40-1 17020-22-3 38232-01-8 38232-03-0 60485-38-3
RL: BIOL (Biological study)
(of grapevine parts in sour rot disease)

L57 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2000 ACS
1981:617663 Document No. 95:217663 The constituents of the flower of Ligustrum obtusifolium Sieb. et Zucc. Kikuchi, Masao (Tohoku Coll. Pharm., Sendai, 983, Japan). Nippon Nogei Kagaku Kaishi, 55(9), 821-3 (Japanese) 1981. CODEN: NNKKAA.

AB Steam distn. of 32 g cold ether ext. from 2 kg flowers of L. obstifolium yielded 0.9 g essential oil consisting of 35 mg acids (I), 50 mg phenols (II), 160 mg of a neutral fraction III (III) and 655 mg of a neutralfraction IV (IV) eluted through silica gel chromatog. with hexane and ether, resp. I was detd. on methylation and gas chromatog. (Silicone OV-17, 60-250.degree.) to contain mainly phenylacetic acid (70%) with n-C6-C12 alkanoic and benzoic acids. From II, III, and IV were isolated phenol, o-, m-, and p-cresol, guaiacol, eugenol (65%); C15-C26 n-alkanes; and cis-3-hexen-1-ol, linalool, benzyl alc., phenylethyl alc., and benzaldehyde, resp. From 29 g solid residue of steam distn. were isolated on silica gel chromatog. (solvent) followed by gas chromatog. 1.45 g

n-C21-C33 n-alkanes (C6H14); 1.45 g higher fatty acid ester and 1.45 g **glycerides**, 4.35 g palmitic and oleanolic **glycerides** (C6H14-Et2O 9:1); 0.73 g n-C18-C28 alcs. (4:1); 0.37 g lauric, palmitic, **linoleic acid** (4:1); 0.24 g .alpha.- and .beta.-amyrin (PhH-EtOAc 9:1); 0.33 g **sitosterol** (4:1). From hot aq. residue of steam distn., were isolated on cooling 0.2 g quercetin and 0.1 g kaempferol and on ether extn. and silica gel chromatog. p-coumaric acid 0.1, caffeic acid 0.1, ferulic acid 0.2, and p-hydroxy-.beta.-phenylethyl alc. 0.2 g.

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IT **Carboxylic acids**, biological studies
RL: BIOL (Biological study)
(alkanoic, of Privet flower)

IT Alcohols, biological studies
Alkanes, biological studies
Fatty acids, esters
Fatty acids, biological studies
Glycerides, biological studies
Phenols, biological studies
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(of Privet flower)

IT 60-12-8 65-85-0, biological studies 78-70-6 **83-46-5** 90-05-1 95-48-7, biological studies 97-53-0 100-51-6, biological studies 100-52-7, biological studies 103-82-2, biological studies 106-44-5, biological studies 108-39-4, biological studies 108-95-2, biological studies 117-39-5 331-39-5 501-94-0 520-18-3 559-70-6 638-95-9 928-96-1 1135-24-6 7400-08-0
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(of Privet flower)

=> s fabry b?/au,in

'IN' IS NOT A VALID FIELD CODE

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L58          18 FILE MEDLINE
L59         219 FILE CAPLUS
L60          25 FILE BIOSIS
'IN' IS NOT A VALID FIELD CODE
L61          25 FILE EMBASE
L62         182 FILE WPIDS
L63           0 FILE JICST-EPLUS
'AU' IS NOT A VALID FIELD CODE
'IN' IS NOT A VALID FIELD CODE
L64           0 FILE CONF
'IN' IS NOT A VALID FIELD CODE
L65           0 FILE NTIS

TOTAL FOR ALL FILES
L66         469 FABRY B?/AU,IN

=> s l66 and l20

L67           0 FILE MEDLINE
L68           5 FILE CAPLUS
L69           0 FILE BIOSIS
L70           0 FILE EMBASE
L71           4 FILE WPIDS
L72           0 FILE JICST-EPLUS
L73           0 FILE CONF
L74           0 FILE NTIS

TOTAL FOR ALL FILES
L75           9 L66 AND L20

=> s l75 not l56

L76           0 FILE MEDLINE
L77           5 FILE CAPLUS
L78           0 FILE BIOSIS
L79           0 FILE EMBASE
L80           4 FILE WPIDS
L81           0 FILE JICST-EPLUS
L82           0 FILE CONF
L83           0 FILE NTIS

TOTAL FOR ALL FILES
L84           9 L75 NOT L56

=> dup rem l84

DUPLICATE IS NOT AVAILABLE IN 'CONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L84
L85           7 DUP REM L84 (2 DUPLICATES REMOVED)

=> d cbib abs 1-7


L85  ANSWER 1 OF 7  CAPLUS  COPYRIGHT 2000 ACS          DUPLICATE 1
2000:259954   Document No. 132:283924  Use of nanoscale sterols and sterol
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esters for producing cosmetic and/or pharmaceutical preparations. Foerster, Thomas; **Fabry, Bernd**; Hollenbrock, Martina; Kropf, Christian (Henkel Kommanditgesellschaft auf Aktien, Germany). PCT Int. Appl. WO 2000021490 A1 20000420, 29 pp. DESIGNATED STATES: W: AU, BG, BR, BY, CA, CN, CZ, HU, ID, IN, IS, JP, KR, LT, LV, MX, NO, NZ, PL, RO, RU, SI, SK, TR, UA, US, ZA; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1999-EP7359 19991005. PRIORITY: US 1998-PV104144 19981014.

AB When sterols and/or sterol esters with particle diams. of 10-300 nm are used for producing cosmetic and/or pharmaceutical prepns., the fineness of the particles compared to known sterol and sterol ester prepns. ensures that they penetrate into the stratum corneum quickly when applied topically. Thus, nanoparticulate **phytosterols** were prepd. by rapid decompression and expansion of a supercrit. soln. of the sterols in CO2 at 160.degree. into an expansion chamber contg. a 4% aq. soln. of PEG, followed by evapn. to dryness. A water-in-oil sunscreen cream was prepd. contg. Dehymuls PGPH 2.0, Lameform TGI 4.0, beeswax 3.0, Plantaren 818 5.0, dioctyl carbonate 5.0, Cetiol J600 2.0, Cetiol OE 3.0, panthenol + bisabolol 1.2, **phytosterols** 0.5, Neo Heliopan Hydro 3.0, Neo Heliopan BB 1.5, Neo Heliopan E 1000 5.0, Neo Heliopan AV 4.0, Uvinul T 150 2.0, 86% glycerin 5.0, preservative, and H2O to 100 wt.%.

L85 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2000 ACS

1999:344854 Document No. 130:347399 Use of mixtures containing **phytostenols** for producing hypocholesteremic preparations. **Fabry, Bernd** (Henkel Kommanditgesellschaft auf Aktien, Germany). PCT Int. Appl. WO 9925362 A1 19990527, 19 pp. DESIGNATED STATES: W: AU, BG, BR, BY, CA, CN, CZ, HU, ID, IS, JP, KR, LT, LV, MX, NO, NZ, PL, RO, RU, SI, SK, TR, UA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1998-EP7059 19981105. PRIORITY: DE 1997-19750453 19971114.

AB Mixts. of active agents contg. (a) **phytostenols** and/or **phytostenol** esters and (b) conjugated fatty acids or their glycerides are used to produce hypocholesteremic prepns. These mixts. have a synergistic effect in reducing the cholesterol content of serum. When encapsulated in gelatin, the prepns. can be administered orally in high doses without any problems; they may also be incorporated into food products. Thus, the contents of a 1.5-g capsule, contg. 5 wt.% .beta.-sitostanyl laurate, 5 wt.% conjugated linoleic acid, and radiolabeled cholesterol, were administered to fasting rats by gavage. The radioactivity level in the blood 48 h later was 12% of that in rats fed labeled cholesterol alone, and was also markedly lower than that in rats given either the phytostanol or the fatty acid alone.

L85 ANSWER 3 OF 7 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD

AN 1999-314061 [27] WPIDS

AB DE 19750453 A UPAB: 19990714

NOVELTY - The preparation of a hypocholesterinemic agent (A) comprises mixing: (a) **phytostenol** and/or **phytostenol** ester; and (b) fatty acids with 6-24C and at least two conjugated double bonds, especially their glycerides.

USE - (A) is used to lower the cholesterol levels in mammal serum.

L85 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2000 ACS DUPLICATE 2

1998:771359 Document No. 130:25230 Use of selected **phytosterol** esters for preparation of hypocholesterolemic agents. **Fabry, Bernd** (Henkel K.-G.a.A., Germany). Ger. DE 19750422 C1 19981126, 6 pp. (German). CODEN: GWXXAW. APPLICATION: DE 1997-19750422 19971114.

AB Use of **phytosterol** esters of unsatd. conjugated fatty acids for prepn. of hypocholesterolemic agents is described. Thus, in a gelatin capsule is added a mixt. of different .beta.-**sitosterol** esters (5%), radioactively-labeled cholesterol (0.5%) and if necessary vitamin E.

The blood of animals receiving these capsules were tested for radioactivity at 3, 6, 12, 24, and 48 h; after 48 h radioactivity was down to 15-21%.

L85 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2000 ACS

1998:385506 Document No. 129:36452 Use of mixtures of phytostanols and tocopherols for the production of hypocholesteremic agents. Weitkemper, Norbert; **Fabry, Bernd** (Henkel Kommanditgesellschaft Auf Aktien, Germany; Weitkemper, Norbert; Fabry, Bernd). PCT Int. Appl. WO 9823275 A1 19980604, 15 pp. DESIGNATED STATES: W: AU, BR, CA, CN, CZ, HU, JP, KR, MX, NO, NZ, PL, RU, SI, SK, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1997-EP6447 19971119. PRIORITY: DE 1996-19649286 19961128; DE 1997-19700796 19970113.

AB Tocopherols, though themselves having little or no hypocholesteremic activity, potentiate the hypocholesteremic action of phytostanol esters. The effect is further potentiated by chitosan, **phytosterol** sulfates, RNA, and DNA. If these agents are encapsulated in gelatin, they can be administered orally in high doses without problems. Thus, a gelatin capsule contg. .beta.-**sitostanol** laurate 5, vitamin E 5, and radiolabeled cholesterol 0.5 wt.% was administered to rats by gavage. The level of blood radioactivity 24 h later was 39% of that in control rats, compared to 51% in rats receiving .beta.-**sitostanol** laurate but not vitamin E.

L85 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2000 ACS

1998:208621 Document No. 128:235001 Skin care compositions containing esterquats and sterols. Ansmann, Achim; **Fabry, Bernd** (Henkel K.-G.a.A., Germany). Ger. DE 19652302 C1 19980326, 8 pp. (German). CODEN: GWXXAW. APPLICATION: DE 1996-19652302 19961216.

AB Skin-conditioning compns. contg. sterols 0.01-3, oils 1-90, and esterquats 0.1-10 wt.% as cationic emulsifiers form oil-in-water emulsions which are stable during storage at elevated temps. Thus, an emulsion contg. Me-quaternized ditallow fatty acid triethanolamine ester methosulfate 5.0, ceteareth-20 5.0, cetearyl glucoside + cetearyl alc. 5.0, **phytosterols** 1.0, coco glycerides 10.0, oleyl oleate 6.0, almond oil 2.0, 86% glycerin 3.0, and water to 100 wt.% had a viscosity of 20.0 Pa s immediately after prepn. and 19.5 Pa s after 2 days storage at 35.degree..

L85 ANSWER 7 OF 7 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD

AN 1998-313690 [28] WPIDS

AB DE 19700796 A UPAB: 19980715
Use of an active agent mixture (I) for the preparation of hypocholesterolaemic agents, is new.
(I) comprises (A) **phytosterols** and/or **phytosterol** esters and (B) potentiating agents selected from tocopherols, chitosans, **phytosterol** sulphates and/or (deoxy)ribonucleic acids.
Also claimed is the use of gelatin for encapsulating (A) or (I).
USE - (I) is preferably administered orally in gelatin capsules, but may also be used in rectal or vaginal suppositories or dissolved or dispersed in foodstuffs.
ADVANTAGE - (B) (which themselves have no hypocholesterolaemic activity) potentiate and accelerate the action of (A) in reducing serum cholesterol levels.
Encapsulation of (I) or (A) in gelatin allows oral administration without prior art problems of taste and/or consistency.
Dwg.0/0

=> s (anticholesterem? or hypocholesterem? or (d10.162.202 or d27.505.519.162.202)/ct)

L86 5020 FILE MEDLINE
L87 7670 FILE CAPLUS
L88 83 FILE BIOSIS
L89 53 FILE EMBASE
L90 138 FILE WPIDS
L91 102 FILE JICST-EPLUS
'CT' IS NOT A VALID FIELD CODE
L92 0 FILE CONF
L93 1 FILE NTIS

TOTAL FOR ALL FILES
L94 13067 (ANTICHOLESTEREM? OR HYPOCHOLESTEREM? OR (D10.162.202 OR D27.505
.519.162.202)/CT)

=> s (l1 or l3 or l5 or l6 or phytoste!ol? or sitoste!ol? or sitosta!ol?) and l94

L95 85 FILE MEDLINE
L96 131 FILE CAPLUS
L97 2 FILE BIOSIS
L98 1 FILE EMBASE
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LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'WPIDS'
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L99 4 FILE WPIDS
L100 2 FILE JICST-EPLUS
'CN' IS NOT A VALID FIELD CODE
'CNS' IS NOT A VALID FIELD CODE
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L101 0 FILE CONF
'CN' IS NOT A VALID FIELD CODE
'CNS' IS NOT A VALID FIELD CODE

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LEFT TRUNCATION IGNORED FOR '?SITOSTANOL?' FOR FILE 'NTIS'
LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'NTIS'
LEFT TRUNCATION IGNORED FOR '?PHYTOSTEROL?' FOR FILE 'NTIS'
L102          0 FILE NTIS

TOTAL FOR ALL FILES
L103        225 (L1 OR L3 OR L5 OR L6 OR PHYTOSTE!OL? OR SITOSTE!OL? OR
SITOSTA!
                OL?) AND L94
Left truncation is not valid in the specified search field in the
specified file.  The term has been searched without left truncation.
Examples: '?TERPEN?' would be searched as 'TERPEN?' and '?FLAVONOID'
would be searched as 'FLAVONOID.'

If you are searching in a field that uses implied proximity, and you
used a truncation symbol after a punctuation mark, the system may
interpret the truncation symbol as being at the beginning of a term.
Implied proximity is used in search fields indexed as single words,
for example, the Basic Index.

=> s l103 and (treat? or therap? or lower? or reduc?) and serum cholesterol

L104         21 FILE MEDLINE
L105         22 FILE CAPLUS
L106          1 FILE BIOSIS
L107          0 FILE EMBASE
COMMAND INTERRUPTED
L108          0 FILE JICST-EPLUS
L109          0 FILE CONF
L110          0 FILE NTIS

TOTAL FOR ALL FILES
L111         44 L103 AND (TREAT? OR THERAP? OR LOWER? OR REDUC?) AND SERUM
CHOLE
                STEROL
If this message appears repeatedly, please notify the Help Desk.
Enter "HELP STN" for information on contacting the nearest STN Help
Desk by telephone or via SEND in the STNMAIL file.

=>

=>

=> dup rem l111

DUPLICATE IS NOT AVAILABLE IN 'CONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L111
L112          40 DUP REM L111 (4 DUPLICATES REMOVED)

=> d 1-40 cbib abs


L112 ANSWER 1 OF 40  CAPLUS  COPYRIGHT 2000 ACS
2000:367057   Document No. 133:17688  Preperation of phytosterol
     and/or phytostanol derivatives for redn. of serum
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cholesterol and triglycerides. Burdick, David Carl; Moine, Gerard; Raederstorff, Daniel; Weber, Peter (F. Hoffmann-La Roche A.-G., Switz.). Eur. Pat. Appl. EP 1004594 A1 20000531, 11 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-122978 19991119. PRIORITY: EP 1998-122412 19981126; EP 1999-119337 19990929.

AB **Phytosterol** and/or phytostanol esters with polyunsatd. fatty acids having from 18 to 22 carbon atoms and at least three carbon-carbon double bonds are were prepd. as agents effective in **reducing** both **serum cholesterol** and triglycerides. Thus, .91 g docosahexaenoic acid was **treated** with 1.03 g stigmasterol in presence of dimethylaminopyridine in CH2Cl2 to give 1.0 g stigmasterol docosahexaenoate as an oil.

L112 ANSWER 2 OF 40 MEDLINE DUPLICATE 1
2000270456 Document Number: 20270456. Noncholesterol sterols and cholesterol **lowering** by long-term simvastatin **treatment** in coronary patients: relation to basal serum cholestanol. Miettinen T A; Strandberg T E; Gylling H. (Department of Medicine, University of Helsinki, Helsinki, Finland.. tatu.a.miettinen@helsinki.fi) . ARTERIOSCLEROSIS, THROMBOSIS, AND VASCULAR BIOLOGY, (2000 May) 20 (5) 1340-6. Journal code: B89. ISSN: 1079-5642. Pub. country: United States. Language: English.

AB Coronary patients with low baseline ratios of serum cholestanol and plant sterols to cholesterol (indicating low cholesterol absorption) but not those with high ratios (high absorption) experienced **reduced** recurrences of coronary events during simvastatin **treatment** in the Scandinavian Simvastatin Survival Study. Thus, in the present study, **serum cholesterol**, its precursor sterols (reflecting cholesterol synthesis), plant sterols (campesterol and **sitosterol**), and cholestanol were measured before and during a 5-year period of placebo **treatment** (n=433) and simvastatin **treatment** (n=434) in patients from a subgroup of the Scandinavian Simvastatin Survival Study to determine whether changes in cholesterol synthesis and serum levels were related to cholesterol absorption. **Serum cholesterol** level was unchanged, the ratios of cholesterol precursor sterols to cholesterol were decreased, and the ratios of plant sterols to cholesterol were increased in relation to increasing baseline ratios of cholestanol quartiles. The latter predicted 5-year ratios and simvastatin-induced **reductions** of the precursor sterols, with the **lowering** of the ratios (cholesterol synthesis **reduction**) being almost twice higher in the lowest versus the highest quartile. The ratios of plant sterols, especially campesterol, to cholesterol were markedly increased during simvastatin **treatment**, mostly in subjects with the highest baseline cholestanol quartiles. Simvastatin **reduced serum cholesterol** more (P=0.003) in the lowest versus the highest cholestanol quartile during the 5-year **treatment** period. The results show for the first time that baseline cholesterol metabolism, measured by serum noncholesterol sterols, predicts the effectiveness of simvastatin in **reducing** cholesterol synthesis and serum levels of cholesterol. The drug suppresses the synthesis of cholesterol markedly more effectively in subjects with

high than with low baseline synthesis but **reduces** respective **serum cholesterol** levels less markedly than synthesis. Subjects with high cholesterol absorption and low synthesis may need a combination **therapy** to **lower** more effectively their **serum cholesterol** levels and prevent an increase in the levels of plant sterols.

L112 ANSWER 3 OF 40 MEDLINE

2000197829 Document Number: 20197829. Soy sterol esters and beta-**sitostanol** ester as inhibitors of cholesterol absorption in human small bowel. Normen L; Dutta P; Lia A; Andersson H. (Department of Clinical Nutrition, Annedalsklinikerna, Goteborg University, Goteborg, Sweden.. nutrition@clinnutr.gu.se) . AMERICAN JOURNAL OF CLINICAL NUTRITION, (2000 Apr) 71 (4) 908-13. Journal code: 3EY. ISSN: 0002-9165. Pub. country: United States. Language: English.

AB BACKGROUND: Plant sterols are natural dietary components with **serum cholesterol-lowering** properties. The **lowering** of **serum cholesterol** by plant sterols is believed to be the result of an inhibition of cholesterol absorption in the small bowel, although increased bile acid excretion has also been suggested. The difference in effect of saturated and unsaturated plant sterols on cholesterol absorption needs to be elucidated further. OBJECTIVE: The primary aim of this study was to measure small-bowel cholesterol absorption and sterol excretion in addition to hepatic cholesterol synthesis after intake of soy sterol esters and beta-**sitostanol** ester corresponding to 1.5 g plant sterols/d. DESIGN: Seven ileostomy subjects were studied during a control period and 2 intervention periods when either soy sterol esters or beta-**sitostanol** ester was added to a basal diet. Ileostomy bags were collected every other hour and frozen immediately for analysis of nutrients and sterols. RESULTS: Cholesterol absorption was 56% (43-65%) in the control period and decreased to 38% (32-46%) in the soy sterol ester period (P = 0.00) and to 39% (30-48%) in the beta-**sitostanol** ester period (P = 0.00). CONCLUSION: Esterified soy sterols and beta-**sitostanol** inhibited cholesterol absorption equally, despite the different structures of the plant sterols.

L112 ANSWER 4 OF 40 MEDLINE

2000202391 Document Number: 20202391. Plant stanol esters affect **serum cholesterol** concentrations of hypercholesterolemic men and women in a dose-dependent manner. Hallikainen M A; Sarkkinen E S; Uusitupa M I. (Department of Clinical Nutrition, University of Kuopio, 70211 Kuopio, Finland.) JOURNAL OF NUTRITION, (2000 Apr) 130 (4) 767-76. Journal code: JEV. ISSN: 0022-3166. Pub. country: United States. Language: English.

AB The effect of plant stanol ester on **serum cholesterol** is dose-dependent. However, it is not clear what the dose is beyond which no additional benefit can be obtained. Therefore, we determined the dose-response relationship for **serum cholesterol** with different doses of plant stanol ester in hypercholesterolemic subjects. In a single-blind design each of 22 men or women consumed five different doses of plant stanol [target (actual) intake 0 (0), 0.8 (0.8), 1.6 (1.6),

2.4 (2.3), 3.2 (3.0) g/d] added as plant stanol esters to margarine for 4 wk. The order of dose periods was randomly determined. Serum total cholesterol concentration decreased (calculated in reference to control) by 2.8% (P = 0.384), 6.8% (P < 0.001), 10.3% (P < 0.001) and 11.3% (P < 0.001) by doses from 0.8 to 3.2 g. The respective decreases for LDL cholesterol were 1.7% (P = 0. 892), 5.6% (P < 0.05), 9.7% (P < 0.001) and 10.4% (P < 0.001). Although the decreases were numerically greater with 2.4 and 3.2 g doses than with the 1.6 g dose, these differences were not significant (P = 0.054-0.516). Serum plant stanols rose slightly, but significantly with the dose (P < 0.001). Apolipoprotein B concentration was decreased significantly already at the dose of 0.8 g (8.7%, P < 0.001). Apolipoprotein E genotype did not affect the lipid responses. We conclude that significant **reduction** of serum total and LDL cholesterol concentrations is reached with the 1.6-g stanol dose, and increasing the dose from 2.4 to 3.2 g does not provide clinically important additional effect.

L112 ANSWER 5 OF 40 MEDLINE DUPLICATE 2
2000136131 Document Number: 20136131. Stanol ester margarine alone and with simvastatin **lowers serum cholesterol** in families with familial hypercholesterolemia caused by the FH-North Karelia mutation. Vuorio A F; Gylling H; Turtola H; Kontula K; Ketonen P; Miettinen T A. (Department of Medicine, University of Helsinki, Helsinki, Finland.. alpo.vuorio@huch.fi) . ARTERIOSCLEROSIS, THROMBOSIS, AND VASCULAR BIOLOGY, (2000 Feb) 20 (2) 500-6. Journal code: B89. ISSN: 1079-5642. Pub. country: United States. Language: English.

AB In heterozygous familial hypercholesterolemia (FH), serum low density lipoprotein (LDL) cholesterol levels are already elevated at birth. Premature coronary heart disease occurs in approximately 30% of heterozygous untreated adult patients. Accordingly, to retard development of atherosclerosis, preventive measures for **lowering** cholesterol should be started even in childhood. To this end, 19 FH families consumed dietary stanol ester for 3 months. Stanol ester margarine **lowers** the **serum cholesterol** level by inhibiting cholesterol absorption. Each individual in the study replaced part of his or her daily dietary fat with 25 g of 80% rapeseed oil margarine containing stanol esters (2.24 g/d stanols, mainly **sitostanol**). The families who consumed this margarine for 12 weeks included 24 children, aged 3 to 13 years, with the North Karelia variant of FH (FH-NK), 4 FH-NK parents, and 16 healthy family members, and a separate group of 12 FH-NK adults who consumed the margarine for 6 weeks and who were on simvastatin **therapy** (20 or 40 mg/d). Fat-soluble vitamins were measured by high-pressure liquid chromatography, and cholesterol precursor sterols (indexes of cholesterol synthesis) and cholestanol and plant sterols (indexes of cholesterol absorption efficiency) were assayed by gas-liquid chromatography. No side effects occurred. Serum LDL cholesterol levels were **reduced** by 18% (P<0.001), 11%, 12% (P<0.001), and 20% (P<0.001) in the 4 groups, respectively. The serum campesterol-to-cholesterol ratios fell by 31% (P<0.001), 29%, 23% (P<0.001), and 36% (P<0.001), respectively, suggesting that cholesterol absorption efficiency was inhibited. Serum lathosterol ratios were elevated by 38% (P<0.001), 11%, 15% (P<0.001), and 19% (P<0.001), respectively, suggesting that cholesterol synthesis was compensatorily upregulated. The FH-NK children

increased their serum lathosterol ratio more than did the FH-NK adults **treated** with stanol ester margarine and simvastatin (P<0.01). In the FH-NK children, serum retinol concentration and alpha-tocopherol-to-cholesterol ratios were unchanged by stanol ester margarine, but alpha- and beta-carotene concentrations and ratios were decreased. As assayed in a genetically defined population of FH patients, a dietary regimen with stanol ester margarine proved to be a safe and effective hypolipidemic **treatment** for children and adults. In FH-NK adults on simvastatin **therapy**, serum LDL cholesterol levels could be **reduced** even further by including a stanol ester margarine in the regimen.

L112 ANSWER 6 OF 40 MEDLINE
2000002453 Document Number: 20002453. Plant lipids that **lower serum cholesterol** [editorial]. Thompson G R. EUROPEAN HEART JOURNAL, (1999 Nov) 20 (21) 1527-9. Journal code: EM8. ISSN: 0195-668X. Pub. country: ENGLAND: United Kingdom. Language: English.

L112 ANSWER 7 OF 40 CAPLUS COPYRIGHT 2000 ACS
1999:529029 Document No. 131:149329 Composition for **reducing serum cholesterol** levels. Sorkin, Harlan Lee, Jr. (USA). PCT Int. Appl. WO 9940922 A1 19990819, 10 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US3003 19990212. PRIORITY: US 1998-22807 19980212.
AB A compn. for **reducing serum cholesterol** in humans and animals is provided. The compn. includes **phytosterol** and policosanol which together produce a synergistic effect in **lowering serum cholesterol** levels. Preferably the compn. includes about 3.2:1 parts by wt. of **phytosterol** and policosanol. A tablet contained cholestatin (.gtoreq.88 % **phytosterols**) 250, rice bran wax (23-33 % policosanol) 250, Ca phosphate 261.7, cellulose 49.4, stearic acid 23.8, Mg stearate 6.8, and silica 9.4 mg.

L112 ANSWER 8 OF 40 CAPLUS COPYRIGHT 2000 ACS
1999:404806 Document No. 131:49483 Sterol esters as food additives. Milstein, Norman; Biermann, Manfred; Leidl, Peter; Von Kreis, Rainer (Henkel Corporation, USA). PCT Int. Appl. WO 9930569 A1 19990624, 38 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US26212 19981215. PRIORITY: US 1997-69790 19971216; US 1998-72434 19980504; US 1998-83584 19980521.
AB A food additive useful for **lowering serum cholesterol** in humans contains a sterol or stanol ester of a fatty

acid or a dicarboxylic acid ester of a sterol or stanol made by reacting a
sterol, stanol and a carboxylic acid in the presence of an effective amt. of a catalyst selected from the group consisting of calcium oxide, calcium
hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and combinations thereof described herein.

L112 ANSWER 9 OF 40 MEDLINE
2000069312 Document Number: 20069312. Effects of low-fat stanol ester enriched margarines on concentrations of serum carotenoids in subjects with elevated **serum cholesterol** concentrations.
Hallikainen M A; Sarkkinen E S; Uusitupa M I. (Department of Clinical Nutrition, University of Kuopio, Kuopio, Finland..
Maarit.Hallikainen@uku.fi) . EUROPEAN JOURNAL OF CLINICAL NUTRITION, (1999
Dec) 53 (12) 966-9. Journal code: EJC. ISSN: 0954-3007. Pub. country: ENGLAND: United Kingdom. Language: English.
AB OBJECTIVE: To investigate the effects of low-fat stanol ester margarines on concentrations of serum carotenoids. DESIGN: A randomized parallel double-blind study design consisting of a 4-week run-in (high-fat diet) and an 8-week experimental (low-fat, low-cholesterol diet) period. During the experimental diet period subjects consumed low-fat wood stanol ester (WSEM), vegetable oil stanol ester (VOSEM) or control (no stanol esters) margarine daily. The daily mean total stanol intake was 2.31 and 2.16 g in
the WSEM and VOSEM groups, respectively. SETTING: Outpatient clinical trial with free-living subjects. SUBJECTS: Altogether, 60 hypercholesterolaemic subjects were selected for the study out of 91 originally screened. The study was completed by 55 subjects. MAIN OUTCOMES
MEASURES: Serum alpha- and beta-carotene and lycopene determined by the HPLC. RESULTS: Serum alpha-carotene concentration did not change significantly in either of the experimental groups, whereas beta-carotene concentration decreased significantly in the WSEM and VOSEM groups (P<0.01), and the change differed significantly (P<0.05 and P <0.01, respectively) from that of the control group. Decrease in alpha+beta-carotene concentration was significantly greater (P <0.05) in both experimental groups than in the control group. However, the change in
alpha-, beta- or alpha+beta-carotene/total cholesterol ratio did not differ significantly among the groups. No significant changes were found in serum lycopene or lycopene/total cholesterol ratio in both experimental
groups. CONCLUSIONS: Low-fat stanol ester margarines appeared to have little effect on serum concentrations of alpha-, beta- or alpha + beta-carotene, or lycopene. SPONSORSHIP: Grant to the University of Kuopio
by Raisio Benecol Ltd, Raisio, Finland.

L112 ANSWER 10 OF 40 MEDLINE
2000007614 Document Number: 20007614. **Sitostanol** administered in lecithin micelles potently **reduces** cholesterol absorption in humans. Ostlund R E Jr; Spilburg C A; Stenson W F. (Division of Endocrinology, Washington University, St Louis, MO, USA..
ROstlund@imgate.wustl.edu) . AMERICAN JOURNAL OF CLINICAL NUTRITION, (1999

Nov) 70 (5) 826-31. Journal code: 3EY. ISSN: 0002-9165. Pub. country: United States. Language: English.

AB BACKGROUND: **Phytosterol** feeding in human clinical trials has had generally small and inconsistent effects on **serum cholesterol** concentrations, raising doubts about the importance of **phytosterols** in natural diets and supplements. OBJECTIVE: The hypothesis tested was that the low intestinal bioavailability of purified **phytosterols** can be increased by formulation with lecithin. DESIGN: The ability of **sitostanol** to **reduce** cholesterol absorption was measured directly by including hexadeuterated cholesterol tracer in a standard test breakfast and measuring plasma tracer concentration 4 and 5 d later by gas chromatography-negative ion mass spectrometry. The tracer amount after a test meal containing **sitostanol** was compared with that after an identical meal containing placebo. Each subject served as his or her own control and the order of testing was random. **Sitostanol** was formulated either as a powder or as a sonicated micellar solution with lecithin. A total of 38 single-meal tests were performed in 6 healthy subjects. RESULTS: **Sitostanol** powder (1 g) **reduced** cholesterol absorption by only 11.3 +/- 7.4% (P = 0.2), confirming in vitro data showing poor solubility of **sitostanol** powder in artificial bile. In contrast, **sitostanol** in lecithin micelles **reduced** cholesterol absorption by 36.7 +/- 4.2% (P = 0.003) at a dose of 700 mg and by 34.4 +/- 5.8% (P = 0.01) at a dose of 300 mg. CONCLUSIONS: **Sitostanol** **reduced** cholesterol absorption at doses **lower** than reported previously, but only if presented in lecithin micelles. Properly formulated **sitostanol** as well as naturally occurring complexes of **phytosterol** and phospholipid might be **therapeutically** useful for cholesterol **lowering**.

L112 ANSWER 11 OF 40 MEDLINE

1999208729 Document Number: 99208729. Serum sterols during stanol ester feeding in a mildly hypercholesterolemic population. Gylling H; Puska P; Vartiainen E; Miettinen T A. (Department of Medicine, University of Helsinki, P.O. Box 340, FIN-00029 HYKS, Helsinki, Finland.) JOURNAL OF LIPID RESEARCH, (1999 Apr) 40 (4) 593-600. Journal code: IX3. ISSN: 0022-2275. Pub. country: United States. Language: English.

AB We investigated the changes of cholesterol and non-cholesterol sterol metabolism during plant stanol ester margarine feeding in 153 hypercholesterolemic subjects. Rapeseed oil (canola oil) margarine without (n = 51) and with (n = 102) stanol (2 or 3 g/day) ester was used for 1 year. Serum sterols were analyzed with gas-liquid chromatography. The latter showed a small increase in **sitostanol** peak during stanol ester margarine eating. Cholestanol, campesterol, and **sitosterol** proportions to cholesterol were significantly **reduced** by 5-39% (P < 0.05 or less for all) by stanol esters; the higher their baseline proportions the higher were their **reductions**. The precursor sterol proportions were significantly increased by 10- 46%, and their high baseline levels predicted low **reduction** of **serum cholesterol**. The decrease of the scheduled stanol dose from 3 to 2 g/day after 6-month feeding increased **serum cholesterol** by 5% (P < 0. 001) and serum plant sterol proportions by 8-13% (P < 0.001), but had no consistent effect on precursor sterols. In twelve subjects, the 12-month level of LDL cholesterol exceeded that of baseline;

the non-cholesterol sterol proportions suggested that stimulated synthesis
with relatively weak absorption inhibition contributed to the non-responsiveness of these subjects. In conclusion, plant stanol ester feeding **lowers serum cholesterol** in about 88% of subjects, decreases the non-cholesterol sterols that reflect cholesterol absorption, increases the sterols that reflect cholesterol synthesis, but also slightly increases serum plant stanols. Low synthesis and high absorption efficiency of cholesterol results in the greatest benefit from stanol ester consumption.

L112 ANSWER 12 OF 40 MEDLINE
1999268178 Document Number: 99268178. Cholesterol **reduction** by different plant stanol mixtures and with variable fat intake. Gylling H; Miettinen T A. (Department of Medicine, University of Helsinki, Finland.)
METABOLISM: CLINICAL AND EXPERIMENTAL, (1999 May) 48 (5) 575-80. Journal code: MUM. ISSN: 0026-0495. Pub. country: United States. Language: English.
AB Our aim was to investigate (1) whether different campestanol/**sitostanol** mixtures in margarine differ in **reducing serum cholesterol**, and (2) whether **sitostanol** ester in butter decreases **serum cholesterol** and alters cholesterol absorption and metabolism. Twenty-three postmenopausal women replaced 25 g dietary fat with (1) **sitostanol** ester-rich (campestanol to **sitostanol** ratio 1:11) and (2) campestanol ester-rich (campestanol to **sitostanol** ratio 1:2) rapeseed oil margarine, (3) butter, and (4) **sitostanol** ester-rich (campestanol to **sitostanol** ratio 1:13) butter. The respective scheduled stanol intake was 3.18, 3.16, and 2.43 g/d. The 6-week margarine periods and, after an 8-week washout, 5-week butter periods were double-blind and in random order. **Serum cholesterol** precursor sterols (indicators of cholesterol synthesis) and plant sterols (indicators of cholesterol absorption) were quantified with gas-liquid chromatography (GLC). Low-density lipoprotein (LDL) cholesterol was **reduced** by 8% and 10% with the **sitostanol** and campestanol ester-rich margarines versus baseline ($P < .05$ for both) and high-density lipoprotein (HDL) cholesterol was increased by 6% and 5% ($P < .05$), so the LDL/HDL cholesterol ratio was **reduced** by 15% ($P < .05$ for both). **Sitostanol** ester-rich butter decreased LDL cholesterol 12% and the LDL/HDL cholesterol ratio 11% ($P < .05$ for both) versus the butter period. The serum proportions of plant sterols and cholestanol were similarly **reduced** and those of cholesterol precursor sterols were similarly increased during all periods ($P < .05$ for all). Serum proportions of **sitostanol** and campestanol were slightly increased, indicating that their absorption related to their dietary intake. During all stanol interventions, serum vitamin D and retinol concentrations and alpha-tocopherol to cholesterol ratios were unchanged, whereas those of alpha- and beta-carotenes were significantly **reduced**. We conclude that varying the campestanol to **sitostanol** ratio from 1:13 to 1:2 in margarine and in butter similarly decreased cholesterol absorption, LDL cholesterol, and the LDL/HDL cholesterol ratio such that the serum lipids became less

atherogenic.

L112 ANSWER 13 OF 40 CAPLUS COPYRIGHT 2000 ACS
1999:244965 Document No. 130:295803 **Sitostanol** content in Setaria italica Beauv. seeds and milled grains. Abe, Bunichi; Itokawa, Emiko; Takatsuto, Suguru (Dep. Chem., Joetsu Univ. Educ., Joetsu, 943-8512, Japan). Nippon Nogei Kagaku Kaishi, 73(4), 419-421 (Japanese) 1999. CODEN: NNKKAA. ISSN: 0002-1407. Publisher: Nippon Nogei Kagakkai.
AB From the nutritional point of view, it is known that **sitostanol** inhibits cholesterol absorption and **lowers** the level of **serum cholesterol**. The **sitostanol** content in Setaria italica Beauv. seeds and milled grain lipids was measured by GC anal. The result showed that each sample had a high content of **sitostanol**, ranging from 13 to 41 mg/100 g seeds or milled grains (27.6 mg, av., n = 9). No difference was found in **sitostanol** content between seeds and milled grains, suggesting that **sitostanol** is not localized in the aleurone layer, but distributed uniformly in the seeds. It was also found that **sitostanol** occurred mainly in free lipid. Nutritionally, S. italica milled grains are good food materials.

L112 ANSWER 14 OF 40 MEDLINE
1999173645 Document Number: 99173645. Effects of 2 low-fat stanol ester-containing margarines on **serum cholesterol** concentrations as part of a low-fat diet in hypercholesterolemic subjects.
Hallikainen M A; Uusitupa M I. (Department of Clinical Nutrition, University of Kuopio, Finland.. Maarit.Hallikainen@uku.fi) . AMERICAN JOURNAL OF CLINICAL NUTRITION, (1999 Mar) 69 (3) 403-10. Journal code: 3EY. ISSN: 0002-9165. Pub. country: United States. Language: English.
AB BACKGROUND: Full-fat **sitostanol** ester-containing margarine **reduces** serum total and LDL cholesterol, but the effect of plant stanol ester-containing margarine as part of a low-fat, low-cholesterol diet has not been studied. OBJECTIVE: We investigated the cholesterol-**lowering** effects of 2 novel, low-fat stanol ester-containing margarines as part of a low-fat diet recommended for hypercholesterolemic subjects. DESIGN: In a parallel, double-blind study, 55 hypercholesterolemic subjects were randomly assigned after a 4-wk high-fat diet (baseline) to 3 low-fat margarine groups: wood stanol ester-containing margarine (WSEM), vegetable oil stanol ester-containing margarine (VOSEM), and control margarine (no stanol esters). The groups consumed the margarines for 8 wk as part of a diet resembling that of the National Cholesterol Education Program's Step II diet. The daily mean total stanol intake was 2.31 and 2.16 g in the WSEM and VOSEM groups, respectively. RESULTS: During the experimental period, the **reduction** in serum total cholesterol was 10.6% ($P < 0.001$) and 8.1% ($P < 0.05$) greater and in LDL cholesterol was 13.7% ($P < 0.01$) and 8.6% ($P = 0.072$) greater in the WSEM and VOSEM groups, respectively, than in the control group. Serum campesterol concentrations decreased 34.5% and 41.3% ($P < 0.001$) in the WSEM and VOSEM groups, respectively. Serum HDL cholesterol, **sitostanol**, campestanol, beta-carotene, and fat-soluble vitamin concentrations did not change significantly from baseline. CONCLUSIONS: We conclude that the low-fat, plant stanol ester-containing margarines are effective cholesterol-**lowering**

products in hypercholesterolemic subjects when used as part of a low-fat, low-cholesterol diet. They offer an additional, clinically significant **reduction** in **serum cholesterol** concentrations to that obtained with a low-fat diet alone.

L112 ANSWER 15 OF 40 MEDLINE

1999417057 Document Number: 99417057. Retinol, vitamin D, carotenes and alpha-tocopherol in serum of a moderately hypercholesterolemic population consuming **sitostanol** ester margarine. Gylling H; Puska P; Vartiainen E; Miettinen T A. (Department of Medicine, University of Helsinki, Finland.) ATHEROSCLEROSIS, (1999 Aug) 145 (2) 279-85. Journal code: 95X. ISSN: 0021-9150. Pub. country: Ireland. Language: English.

AB We have shown earlier that **sitostanol** ester margarine **lowers serum cholesterol** by inhibiting cholesterol absorption so that, theoretically, there could be interference with the absorption of fat-soluble vitamins. Accordingly, we investigated whether **sitostanol** ester margarine affects the serum levels of vitamin D, retinol, alpha-tocopherol and alpha- and beta-carotenes during 1-year **treatment** in 102 subjects and 49 controls with moderate hypercholesterolemia. The vitamins were assayed at baseline on home diet, on margarine alone, after 1 year's consumption of **sitostanol** ester margarine and after an additional 2 months on home diet. In the **sitostanol** group, serum plant sterols, indicators of cholesterol absorption efficiency, were **reduced** up to -38% in relation to controls from home diet ($P < 0.01$) indicating that cholesterol absorption was markedly **reduced**. Vitamin D and retinol concentrations and the ratio of alpha-tocopherol to cholesterol were unchanged by **sitostanol** ester. Serum beta-carotenes and alpha-carotene concentration but not proportion were **reduced** in the **sitostanol** group from baseline and in relation to controls ($P < 0.01$). Retinol and vitamin D were unassociated with **serum cholesterol**, plant sterols or other vitamins, whereas alpha-tocopherol and carotenes were significantly associated with serum plant sterols suggesting that the higher cholesterol absorption efficiency, the higher the alpha-tocopherol and carotene levels in serum. We conclude that **sitostanol** ester did not affect vitamin D and retinol concentrations and alpha-tocopherol/cholesterol proportion, but **reduced** serum beta-carotene levels. Alpha-tocopherol and carotenes, but not vitamin D and retinol, were related to **serum cholesterol** and cholesterol absorption.

L112 ANSWER 16 OF 40 CAPLUS COPYRIGHT 2000 ACS

1999:792367 Document No. 132:11900 Stanol esters in the **treatment** of hypercholesterolemia. Miettinen, T. A. (Department of Medicine, University of Helsinki, Helsinki, FIN-00029, Finland). Eur. Heart J. Suppl., 1(Suppl. S), S50-S57 (English) 1999. CODEN: EHJSFT. ISSN: 1520-765X. Publisher: W. B. Saunders Co. Ltd..

AB Aims: The extent and mechanisms of **serum cholesterol lowering** were studied by feeding mayonnaise and margarine without or with fortification with fat-sol. stanol esters to patients with mild hypercholesterolemia. Methods and Results: Double-blind, randomized, controlled studies were performed before and during feeding of mayonnaise or margarine with or without addn. of stanol esters to 242 mildly hypercholesterolemic participants. Serum lipids, ratios of non-cholesterol sterols to cholesterol, cholesterol absorption, and fecal

elimination and synthesis of cholesterol were quantified. Replacement of home dietary fat with mayonnaise or margarine without stanol esters **lowered** serum total cholesterol levels by 5-9%. Total and low-d. lipoprotein (LDL) cholesterol levels were **lowered** up to 15% and 20%, resp., from home-diet values after feeding stanol ester margarine. Triglycerides and high-d. lipoprotein (HDL) cholesterol levels were unchanged. Cholesterol absorption efficiency and cholestanol and plant sterol ratios were decreased by up to 45% and resulted in proportionately enhanced elimination of cholesterol in stool as cholesterol but not as bile acids. Cholesterol synthesis and cholesterol precursor sterol ratios were increased compensatorily by more than 20%, a factor limiting the decrease of LDL cholesterol. Serum levels of vitamins A, E, D and .alpha.-carotene or ratios to cholesterol were not changed, but the .beta.-carotene ratio was decreased during 1-yr of stanol ester margarine feeding. Conclusion: Stanol ester margarine is a well-tolerated food ingredient that **lowers** serum total cholesterol levels by about 15% and LDL cholesterol levels by about 20% from home-diet values. Current hypocholesterolemic diets that include stanol ester margarine can normalize serum LDL cholesterol in more than half of participants; the rest may require combination **treatment** with statins.

L112 ANSWER 17 OF 40 CAPLUS COPYRIGHT 2000 ACS

1998:323105 Document No. 129:15518 Texturizing compositions for use in fat blends in food. Wester, Ingmar (Raisio Yhtyma Oy, Finland; Wester, Ingmar). PCT Int. Appl. WO 9819556 A1 19980514, 41 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1997-FI669 19971103. PRIORITY: US 1996-740845 19961104.

AB Fatty acid esters, such as the unsatd. fatty acid esters of sterols and/or stanols, are used as a replacement for a substantial portion or all of the undesirable satd. and trans-unsatd. fats used as structure giving hardstocks in edible foods such as margarines, mayonnaise, cooking oils, cheeses, butter and shortening. Because of the similarity in the crystallinity and phys. properties of the esters to those of the undesirable hardstock fats, the substitution or replacement contributes favorably to the flavor, texture and other sensory properties of the foods. Only the fatty acid portion of the **phytosterol** esters defined herein as texturizing agent is digested or absorbed with the sterol part being unabsorbable, thereby resulting in a **redn.** in total caloric uptake. Furthermore, the **phytosterol** fatty acid esters **reduce** the absorption of both dietary and biliary cholesterol from the digestive tract, thereby **lowering** the blood **serum cholesterol** level, esp. the LDL-cholesterol.

L112 ANSWER 18 OF 40 CAPLUS COPYRIGHT 2000 ACS

1998:124016 Document No. 128:191937 Stanol composition and the use thereof. Wester, Ingmar; Palmu, Tapio; Miettinen, Tatu; Gylling, Helena (Raision Tehtaat Oy AB, Finland; Wester, Ingmar; Palmu, Tapio; Miettinen, Tatu;

Gylling, Helena). PCT Int. Appl. WO 9806405 A1 19980219, 29 pp. DESIGNATED STATES: W: AT, AU, AZ, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KP, KR, KZ, LK, LT, LU, LV, MD, MK, MN, MX, NO, NZ, PL, PT, RO, RU, SE, SG, SI, SK, TJ, TM, TR, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1996-FI465 19960902. PRIORITY: FI 1996-3126 19960809.

AB A stanol compn. contg. in addn. to **sitostanol** as the main component, also a substantial amt. of at least 10 % campestanol effectively **lowers serum cholesterol** levels when incorporated in edible commodities. Upon esterification the compn. is esp. useful in edible fats and oils and in fat-contg. foods. A vegetable oil distillate (brassicasterol 2.7, campesterol 26.7, stigmasterol 18.4, **sitosterol** 49.1, and **sitostanol** 2.9 %) was hydrogenated and esterified with rapeseed oil Me ester. Margarines were produced using the above product.

L112 ANSWER 19 OF 40 MEDLINE

1999058324 Document Number: 99058324. [Is the Finnish "healthy margarine" food or medicine? Addition of plant sterols can **lower** cholesterol levels]. Ar det finska "halsomargarinet" mat eller medicin? Tillsats av vaxtsteroler kan sanka hoga kolesterolvarden. Wikstrom A C. (Karolinska institutet, enheten for preventiv nutrition, Huddinge sjukhus.) LAKARTIDNINGEN, (1998 Nov 11) 95 (46) 5146-8. Ref: 18. Journal code: L0N. ISSN: 0023-7205. Pub. country: Sweden. Language: Swedish.

AB Sine the autumn of 1995, Benecol, a proprietary brand of cholesterol-**lowering** margarine, has been available in ordinary grocery shops in Finland. The active ingredient is a **sitostanol** ester. Several studies in humans have shown use of the margarine to result in an approximately 10 per cent **reduction** in total **serum cholesterol**, and a 13-15 per cent **reduction** of LDL-cholesterol. However, further studies are required of its phyto-oestrogenic and endocrine effects, and its effects on growing children, particularly regarding subsequent fertility in boys. Although the margarine is classed as a 'functional food' in Finland, the question arises where the line is to be drawn between medicines and food-stuffs.

L112 ANSWER 20 OF 40 CAPLUS COPYRIGHT 2000 ACS

1999:52146 Document No. 130:261865 **Serum cholesterol lowering** effects of the **phytosterol** derivative (LPSS) in rats. Che, Jeong-Hwan; Chung, Dae-Won; Noh, Seung-Kwon; Lee, Yong-Soon; Park, Jae-Hak (Department of Veterinary Public Health, College of Veterinary Medicine, Seoul National University, Suwon, 441-744, S. Korea).
J. Toxicol. Public Health, 14(4), 535-539 (Korean) 1998. CODEN: JTPHFT. ISSN: 1226-8399. Publisher: Korean Society of Toxicology.

AB The present study was designed to investigate the **serum cholesterol lowering** effect of the **phytosterol** deriv. (LPSS) on high cholesterol (HC) diet-induced hypercholesterolemia in male weaning Sprague-Dawley (SD) rats. Rats were fed with HC diet contg. 1% cholesterol and 0.5% cholic acid for 1 wk. After 1 wk, the LPSS

oil suspension (0.32 g/kg B.W.) was orally administered to the rats fed with either basal diet or HC diet groups for 7 days. In addn., the LPSS powder (0.14%) mixed with basal diet or HC diet was fed to the rats for 7 days. Serum total cholesterol and LDL-cholesterol contents were not altered by administration of the LPSS oil suspension with basal diet. However, they were significantly decreased by administration of the LPSS oil suspension with HC diet at day 14. Also, they were significantly decreased by the LPSS powder mixed with basal diet or HC diet at day 9, 11, 14. HDL-cholesterol contents were not altered by the LPSS oil suspension or LPSS powder. These results indicated that the **phytosterol** deriv.(LPSS) might decrease serum total cholesterol and LDL-cholesterol contents in rats.

L112 ANSWER 21 OF 40 CAPLUS COPYRIGHT 2000 ACS
1998:636787 Document No. 130:24326 Effectivity and safety testing: Becel with **phytosterols** for effective cholesterol **lowering**.
Louwes, A. C. M. (Neth.). Voeding, 59(9), 6-8 (Dutch) 1998. CODEN: VOEDAK. ISSN: 0042-7926. Publisher: Keesing Noordervliet.
AB Becel margarine with various plant sterol additives was tested in volunteers at a dose of 3 g total sterols/day for its effectiveness in **lowering serum cholesterol** levels. Margarine contg. esterified soybean sterols **lowered** the total cholesterol and LDL cholesterol levels by 7-8 and 12-13%, resp.; this effect was dose dependent, and HDL cholesterol levels and other blood parameters remained unchanged. Margarine contg. **sitostanol** esters was somewhat less effective, and margarine contg. rice germ sterols or shea seed sterols had little effect on cholesterol levels. All the margarines **lowered** the serum carotenoid levels. Toxicol. testing showed no mutagenic, pseudoestrogenic, hematol., or gastrointestinal effects of plant steroids.

L112 ANSWER 22 OF 40 CAPLUS COPYRIGHT 2000 ACS
1997:617966 Document No. 127:257634 Z-2-[4-(4-Chloro-1,2-diphenyl-but-1-enyl)phenoxy]ethanol as **serum cholesterol lowering** agent, preparation thereof, and pharmaceutical compositions. Harkonen, Pirkko; Miettinen, Tatu; Mantyla, Eero; Kangas, Lauri; DeGregorio, Michael (Orion-Yhtyma Oy, Finland; Harkonen, Pirkko; Miettinen, Tatu; Mantyla, Eero; Kangas, Lauri; DeGregorio, Michael). PCT Int. Appl. WO 9732574 A1 19970912, 10 pp. DESIGNATED STATES: W: AM, AU, AZ, BA, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, IL, IS, JP, KG, KP, KR, KZ, LK, LT, LV, MD, MK, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1997-FI140 19970304. PRIORITY: GB 1996-4577 19960304.
AB A method of **lowering serum cholesterol** levels comprises administering to a patient in need of such **treatment** an effective amt. of Z-2-[4-(4-chloro-1,2-diphenyl-but-1-enyl)phenoxy]ethanol (I). Pharmaceutical compns. useful in the method are also disclosed, as is use of I in the manuf. of a medicament for the prevention or **treatment** of atherosclerosis. Prepn. of I is described.

L112 ANSWER 23 OF 40 MEDLINE

1998077368 Document Number: 98077368. **Reduction** of **serum cholesterol** in postmenopausal women with previous myocardial infarction and cholesterol malabsorption induced by dietary **sitostanol** ester margarine: women and dietary **sitostanol** . Gylling H; Radhakrishnan R; Miettinen T A. (Department of Medicine, University of Helsinki, Finland.) CIRCULATION, (1997 Dec 16) 96 (12) 4226-31. Journal code: DAW. ISSN: 0009-7322. Pub. country: United States.
Language: English.

AB BACKGROUND: **Reduction** of **serum cholesterol** decreases mortality in primary and especially in secondary prevention. We investigated how effectively postmenopausal women with a previous myocardial infarction **reduced** their **serum cholesterol** with dietary means by using **sitostanol** ester rapeseed oil margarine, alone and in combination with statins, and to what extent cholesterol metabolism was affected. METHODS AND RESULTS: The first study group consisted of 22 randomly chosen women with angiographically documented coronary artery disease. Baseline studies on home diet were followed by double-blind, randomized, cross-over studies on margarine without and with **sitostanol** (3 g/d) ester for 7 weeks in random order. A second group of 10 women on simvastatin consumed **sitostanol** ester margarine for 12 weeks. **Sitostanol** ester margarine **lowered** serum total cholesterol by 13% (P<.05) and LDL cholesterol by 20% (P<.01). **Sitostanol** ester margarine **reduced** total cholesterol in all patients, LDL cholesterol <2.6 mmol/L (<100 mg/dL) in 32%, and <3.4 mmol/L (<133 mg/dL) in 73% versus none and 27% during the home diet (P<.01 for both). Combined with simvastatin, **sitostanol** still **reduced** total and LDL cholesterol by 11+/-3% and 16+/-5% (P<.01 for both). **Sitostanol** **reduced** absorption (-45%), increased fecal elimination (+45% as neutral sterols), and stimulated synthesis (+39%) of cholesterol. High cholestanol and plant sterol (high cholesterol absorption) and low baseline precursor sterol proportions (low cholesterol synthesis) predicted high decreases in **serum cholesterol**. CONCLUSIONS: Dietary use of **sitostanol** ester margarine normalizes LDL cholesterol in about one third of women with previous myocardial infarction, especially in those with high baseline absorption and low synthesis of cholesterol, and in combination with statins **reduces** the needed drug dose.

L112 ANSWER 24 OF 40 MEDLINE

96048304 Document Number: 96048304. Sterol absorption and sterol balance in **phytosterolemia** evaluated by deuterium-labeled sterols: effect of **sitostanol treatment**. Lutjohann D; Bjorkhem I; Beil U F; von Bergmann K. (Department of Clinical Pharmacology, University of Bonn, Germany..) JOURNAL OF LIPID RESEARCH, (1995 Aug) 36 (8) 1763-73. Journal code: IX3. ISSN: 0022-2275. Pub. country: United States. Language: English.

AB Absorption of dietary cholesterol, campesterol, and **sitosterol**, cholesterol balance, and fecal excretion of plant sterols were determined in three unrelated patients with **phytosterolemia** and three healthy volunteers during constant intake of cholesterol and plant sterols

using accurate gas-liquid chromatography-mass spectrometry techniques. Each subject received a mixture of [26,26,26,27,27,27-2H6]cholesterol, [6,7,7-2H3]**sitostanol**, and [6,7,7-2H3]campesterol together with two non-absorbable markers, [5,6,22,23-2H4]**sitostanol** and chromic oxide. Feces were collected from days 5 to 7 and absorption of different sterols was calculated from the intestinal disappearance of the different sterols relative to [5,6,22,23-2H4]**sitostanol** and chromic oxide. The results obtained by the two markers were not different and the absorption of cholesterol averaged 53 +/- 4% for the patients (mean +/- SD) and 43 +/- 3% for the volunteers. Campesterol absorption averaged 24 +/- 4% in patients and 16 +/- 3% in healthy volunteers, whereas **sitosterol** absorption averaged 16 +/- 1% and 5 +/- 1%, respectively. Cholesterol synthesis expressed by body weight varied considerably in the two groups but appeared to be about 5 times **lower** in patients than in controls. Administration of a high dose of **sitostanol** (0.5 g t.i.d.) to two patients was followed by a **reduction** in cholesterol absorption by 24% and 44%, an increase in fecal output of cholesterol and steroids derived from cholesterol and plant steroids, and a marked **reduction** of **serum cholesterol**, campesterol, and **sitosterol**. Under the conditions used, inhibition of cholesterol absorption by **sitostanol** was not followed by a significant rise in cholesterol synthesis. The time of observation was, however, too short to allow final conclusion on this. The results show that the absolute difference in absorption rate of different sterols between the patients and healthy volunteers was about the same. As a consequence, increasing hydrophobicity causes a relative decrease of absorption rates. Thus, patients with **phytosterolemia** seem to have a generally increased absorption of sterols rather than a loss of a specific discriminatory mechanism, and oral administration of **sitostanol** seems to be an interesting new approach for **treatment** of **phytosterolemia**.

L112 ANSWER 25 OF 40 MEDLINE

96036647 Document Number: 96036647. **Reduction** of **serum cholesterol** with **sitostanol**-ester margarine in a mildly hypercholesterolemic population [see comments]. Miettinen T A; Puska P; Gylling H; Vanhanen H; Vartiainen E. (Department of Medicine, University of Helsinki, Finland..) NEW ENGLAND JOURNAL OF MEDICINE, (1995 Nov 16) 333 (20) 1308-12. Journal code: NOW. ISSN: 0028-4793. Pub. country: United States. Language: English.

AB BACKGROUND. Dietary plant sterols, especially **sitostanol**, **reduce serum cholesterol** by inhibiting cholesterol absorption. Soluble **sitostanol** may be more effective than a less soluble preparation. We tested the tolerability and cholesterol-**lowering** effect of margarine containing **sitostanol** ester in a population with mild hypercholesterolemia. METHODS. We conducted a one-year, randomized, double-blind study in 153 randomly selected subjects with mild hypercholesterolemia. Fifty-one consumed margarine without **sitostanol** ester (the control group), and 102 consumed margarine containing **sitostanol** ester (1.8 or 2.6 g of **sitostanol** per day). RESULTS. The margarine containing **sitostanol** ester was well tolerated. The mean one-year **reduction** in **serum cholesterol** was 10.2 percent in the **sitostanol** group, as compared with an increase of 0.1 percent in the control group. The difference in the change in

serum cholesterol concentration between the two groups was -24 mg per deciliter (95 percent confidence interval, -17 to -32; P < 0.001). The respective **reductions** in low-density lipoprotein (LDL) cholesterol were 14.1 percent in the **sitostanol** group and 1.1 percent in the control group. The difference in the change in LDL cholesterol concentration between the two groups was -21 mg per deciliter (95 percent confidence interval, -14 to -29; P < 0.001). Neither serum triglyceride nor high-density lipoprotein cholesterol concentrations were affected by **sitostanol**. Serum campesterol, a dietary plant sterol whose levels reflect cholesterol absorption, was decreased by 36 percent in the **sitostanol** group, and the **reduction** was directly correlated with the **reduction** in total cholesterol (r = 0.57, P < 0.001). CONCLUSIONS. Substituting **sitostanol**-ester margarine for part of the daily fat intake in subjects with mild hypercholesterolemia was effective in **lowering** serum total cholesterol and LDL cholesterol.

L112 ANSWER 26 OF 40 MEDLINE DUPLICATE 3

96113514 Document Number: 96113514. The effect of cholesterol absorption inhibition on low density lipoprotein cholesterol level. Gylling H; Miettinen T A. (Second Department of Medicine, University of Helsinki, Finland.) ATHEROSCLEROSIS, (1995 Oct) 117 (2) 305-8. Journal code: 95X. ISSN: 0021-9150. Pub. country: Ireland. Language: English.

AB The degree of **serum cholesterol lowering** by up to almost maximal inhibition of cholesterol absorption was tested during neomycin and neomycin + **sitostanol treatment** in six hypercholesterolemic men. Neomycin decreased cholesterol absorption efficiency by 49% and the combination by 79%, and **serum cholesterol** level by 27% and 36%, respectively. The correlation between the absorption percentage and low density lipoprotein (LDL) cholesterol was significant (r = 0.510), and the regression equation (y = 0.04x + 2.59) suggested that the mean LDL cholesterol content would be about 2.5 mmol/l at zero cholesterol absorption. In conclusion, in hypercholesterolemic subjects, the **lowering** of LDL cholesterol appears to be limited to a low normal range only by almost totally inhibiting cholesterol absorption.

L112 ANSWER 27 OF 40 CAPLUS COPYRIGHT 2000 ACS

1995:639977 Document No. 123:65634 **Serum cholesterol-lowering** effects and triterpenoids of the herbs of Lactuca indica. Park, Hee Juhn; Lee, Myung Sun; Lee, Eun; Choi, Moo Young; Cha, Bae Chun; Jung, Won Tae; Young, Han Suk (Coll. Life Sci. Natural Resour., Sangji Univ., Wonju, 220-702, S. Korea). Saengyak Hakhoechi, 26(1), 40-6 (Korean) 1995. CODEN: SYHJAM. ISSN: 0253-3073.

AB A methanol ext. of the herbs of Lactuca indica L. effectively decreased the serum levels of total cholesterol and LDL-cholesterol when orally administered with diet. A chloroform-sol. fraction showed the similar effects with the methanol ext. Chromatog. sepn. afforded a mixt. of triterpene alcs. and their acyl derivs. A mixt. of triterpene alcs. were identified as .beta.-amyrin, .alpha.-amyrin, lupeol, pseudotaraxasterol, taraxasterol, and germanicol by spectroscopic methods. The acyl moieties in the corresponding acyl mixt. were characterized as acetates and palmitates. Three kinds of sterols such as .beta.-**sitosterol**, compesterol and stigmasterol were isolated as a mixt. state.

L112 ANSWER 28 OF 40 MEDLINE

95163652 Document Number: 95163652. Cholesterol malabsorption caused by **sitostanol** ester feeding and neomycin in pravastatin-**treated** hypercholesterolaemic patients. Vanhanen H. (Second Department of Medicine, University of Helsinki, Finland..) EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY, (1994) 47 (2) 169-76. Journal code: EN4. ISSN: 0031-6970. Pub. country: GERMANY: Germany, Federal Republic of.

Language: English.

AB **Serum cholesterol** values were insufficiently **reduced** by pravastatin in two different patient populations. Therefore, we studied whether further cholesterol **reduction** could be achieved by inhibiting both cholesterol synthesis (by pravastatin) and absorption (by neomycin or **sitostanol** ester). Thus, we measured **serum cholesterol**, cholesterol precursors (reflecting cholesterol synthesis), cholestanol and plant sterols (reflecting cholesterol absorption and biliary secretion) for up to 6 weeks in pravastatin-**treated** patients with familial hypercholesterolaemia (FH, n = 13) and with and without ileal bypass during addition of neomycin (1.5 g per day) and in another patient population of non-FH (n = 14) subjects during addition of **sitostanol** ester (1.5 g per day). Addition of neomycin **lowered** serum total, LDL and HDL cholesterol by a further 20%, and increased the pravastatin-**lowered** precursor:cholesterol ratios by 20% (irrespective of ileal bypass). It also **reduced** by 20% the plant sterol:cholesterol ratio (irrespective of ileal bypass) which was markedly increased by pravastatin alone. Pravastatin and neomycin in combination **lowered** total, LDL and HDL cholesterol by 45%, 53% and 17%, respectively. This combined regimen **reduced** the serum lathosterol:cholesterol ratio to about half of the **reduction** caused by pravastatin, while the elevation of the plant sterols:cholesterol ratio was less with the combination than with pravastatin alone. Changes in **serum cholesterol** precursor:cholesterol and plant sterol:cholesterol ratios during the combined **treatment** were smaller in the subgroup with ileal bypass. Addition of **sitostanol** ester did not **lower** serum total or LDL cholesterol nor the precursor:cholesterol ratios significantly, while the **reduction** observed in the plant sterols:cholesterol ratios was similar to that achieved with neomycin addition.(ABSTRACT TRUNCATED AT 250 WORDS)

L112 ANSWER 29 OF 40 CAPLUS COPYRIGHT 2000 ACS

1994:671840 Document No. 121:271840 Effect of the acyl-CoA:cholesterol acyltransferase inhibitor DuP 128 on cholesterol absorption and **serum cholesterol** in humans. Hainer, James W.; Terry, J. Greg; Connell, Jill M.; Zyruk, Hanna; Jenkins, Rhonda M.; Shand, Donna L.; Gillies, Peter J.; Livak, Kenneth J.; Hunt, Thomas L.; et al. (DuPont Merck Pharmaceutical Company, Wilmington, DE, 19880-0026, USA). Clin. Pharmacol. Ther. (St. Louis), 56(1), 65-74 (English) 1994. CODEN: CLPTAT.

ISSN: 0009-9236.

AB Intestinal cholesterol esterification by the enzyme acyl-CoA:cholesterol acyltransferase (ACAT) is a presumed prerequisite for cholesterol absorption. We evaluated the effect of a potent, poorly absorbed ACAT inhibitor (DuP 128: N'-(2,4-difluorophenyl)-N-[5,(4,5-diphenyl-1H-imidazol-2-ylthio)pentyl]-N-heptylurea) on cholesterol absorption in a randomized

trial. Thirty subjects received DuP 128 for 7 wk, 10 each at 900 mg per day, 1800 mg per day, and 3600 mg per day;six subjects received placebo; and nine subjects received 1 gm neomycin twice a day. Cholesterol absorption detns. used a continuous dual isotope 14C-cholesterol and 3H-beta **sitosterol** method. DuP 128 (pooled doses) induced at 14.4% .+-. 11.4% **redn**. in cholesterol absorption ($p < 0.05$ vs. placebo): 17.6% .+-. 8.4% at 900 mg, 9.1% .+-. 11.4% at 1800 mg, and 17.1% .+-. 12.9% at 3600 mg. Neomycin induced a 26.4% .+-. 10.7% **redn**. ($p < 0.01$). After 6 wk, neomycin **reduced** serum total and low-d. lipoprotein cholesterol by 22.4% .+-. 9.2% and 24.0% .+-. 11.6%, resp. ($p < 0.01$ vs. placebo). DuP 128 induced **redns**. of 3.9% .+-. 11% (difference not significant) and 4.95% .+-. 14.3% ($p = 0.05$). ACAT inhibitors limit cholesterol absorption in humans; however, the magnitude of the effect, as exemplified by DuP 128, is small.

L112 ANSWER 30 OF 40 MEDLINE
91298880 Document Number: 91298880. Hypocholesterolemic activity of beta-**sitosterol** in cholesterol fed sea quail. Day C E. (Audax, Inc., Leitchfield, KY 42754..) ARTERY, (1991) 18 (3) 125-32. Journal code: 8NN. ISSN: 0098-6127. Pub. country: United States. Language: English.
AB Male SEA quail were fed a 0.5% cholesterol supplemented diet, to which was added 0%, 1%, and 2% beta-**sitosterol**, for a period of seven days. Dietarily administered beta-**sitosterol** **reduced** total **serum cholesterol** levels by 62% and 72% at the 1% and 2% **treatment** doses, respectively. This hypocholesterolemic activity of **sitosterol** in cholesterol fed SEA quail was anticipated on the basis of the numerous earlier studies demonstrating similar activity in cholesterol fed chickens. Beta-**sitosterol** was tested in SEA quail to experimentally confirm its expected **serum cholesterol lowering** effects and to expand further the utility of the SEA quail model in cholesterol and atherosclerosis research.

L112 ANSWER 31 OF 40 BIOSIS COPYRIGHT 2000 BIOSIS
1990:429645 Document No.: BA90:90446. ON THE **HYPOCHOLESTEREMIC** EFFECT OF ERYNGIUM-HETEROPHYLLUM. NAVARRETE A; NINO D; REYES B; SIXTOS C; AGUIRRE E; ESTRADA E. LABORATORIO PRODUCTOS NATURALES, AREA DE QUIMICA, DEP. PREPARATORIA AGRICOLA, UNIVERSIDAD AUTONOMA CHAPINGO, CHAPINGO, ESTADO DE MEXICO, CP 56230, MEXICO.. FITOTERAPIA, (1990) 61 (2), 182-184. CODEN: FTRPAE. ISSN: 0367-326X. Language: English.
AB Oral administration of an aqueous extract of E. heterophyllum caused **reduction** in the **serum cholesterol** in rats and significant hypotensive effect in humans. Mannitol, glucose and .beta.-**sitosterol** were identified as constituents of this plant.

L112 ANSWER 32 OF 40 MEDLINE
90032859 Document Number: 90032859. The mechanism of the hypocholesterolaemic effect of activated charcoal. Neuvonen P J; Kuusisto P; Manninen V; Vapaatalo H; Miettinen T A. (Department of Clinical Pharmacology, University of Helsinki, Finland..) EUROPEAN JOURNAL OF CLINICAL INVESTIGATION, (1989 Jun) 19 (3) 251-4. Journal code: EN3. ISSN: 0014-2972. Pub. country: ENGLAND: United Kingdom. Language: English.
AB The hypocholesterolaemic mechanism of activated charcoal was studied in

seven patients with primary hypercholesterolaemia. The **reduction** of **serum cholesterol** was correlated with the serum concentrations of cholesterol precursors and of two plant sterols. Activated charcoal, 8 g t.i.d. for 4 weeks, **reduced** serum concentration of total cholesterol by 27% (P less than 0.01). The effect was accompanied by a moderate elevation (P less than 0.05) in serum squalene and desmosterol concentrations and by a marked increase (up to 300-700%) in serum lathosterol and delta 8 lathosterol concentrations. The levels of two plant sterols, campesterol and beta-**sitosterol**, were unchanged or only slightly decreased by the use of activated charcoal. The decrease of **serum cholesterol** concentration had significant negative correlations with serum lathosterol and delta 8 lathosterol, and significant positive correlations with serum cholestanol and beta-**sitosterol**. These observations suggest an increased cholesterol synthesis upon **treatment** with activated charcoal, probably caused by the interference with the enterohepatic circulation of bile acids.

L112 ANSWER 33 OF 40 CAPLUS COPYRIGHT 2000 ACS

1984:208354 Document No. 100:208354 **Hypocholesteremic** effect of linoleic acid and **phytosterol**. I. Change in serum lipids in healthy men. Hasegawa, Kyoko; Shibuya, Kaori (Kagawa Nutr. Coll., Tokyo, Japan). Joshi Eiyo Daigaku Kiyo, 14, 165-72 (Japanese) 1983. CODEN: JEDKD7.

AB Twenty men (av. age 36.6 yr) were divided into 4 groups and each group was given 3, 2, 1, or 0 g cottonseed sterol (82% **sitosterol** [**83-46-5**]) day/person for 5 days, fed with trilinolein [537-40-6] (60 g) or butterfat (50 g) and sunflower oil (10 g). Linoleic acid [60-33-3] **lowered** the **serum cholesterol** [57-88-5] levels, probably by accelerating the catabolism of cholesterol to bile acid. Administration of plant sterol (mainly **sitosterol**) **reduced** absorption of cholesterol. Thus vegetable oils, esp. germ oils, have **hypocholesteremic** effects since they are high in linoleic acid and **sitosterol**.

L112 ANSWER 34 OF 40 MEDLINE

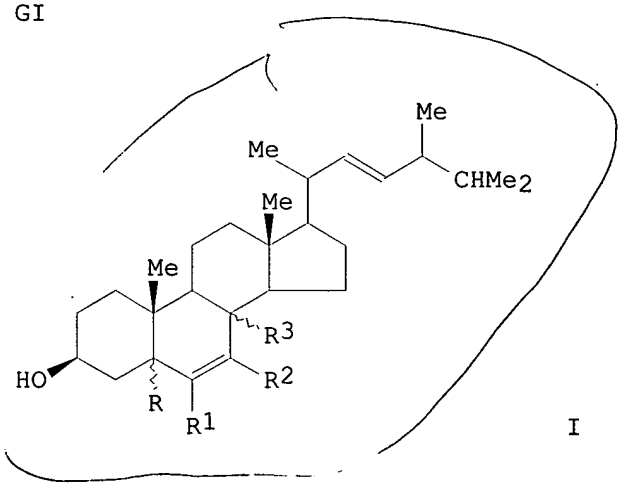
82032551 Document Number: 82032551. Antihypercholesterolemic activity of beta-**sitostanol** in rabbits. Ikeda I; Kawasaki A; Samezima K; Sugano M. JOURNAL OF NUTRITIONAL SCIENCE AND VITAMINOLOGY, (1981) 27 (3) 243-51. Journal code: JFD. ISSN: 0301-4800. Pub. country: Japan. Language: English.

AB The antihypercholesterolemic activity of beta-**sitosterol** and beta-**sitostanol** was compared in male rabbits given a cholesterol-supplemented diet. beta-**Sitosterol** and beta-**sitostanol** were fed to these rabbits at the 0.5% level with cholesterol (0.5% and 0.2% in experiments I and II, respectively). The **serum cholesterol** level tended to be **lower** in rabbits fed beta-**sitostanol** than in the animals fed beta-**sitosterol** even in experiment I. The beta-**sitostanol** exhibited a significantly greater hypocholesterolemic activity in experiment II, LDL-cholesterol being decreased markedly. The liver cholesterol decreased in both groups of rabbits to a similar extent. beta-

Sitostanol prevented more effectively the formation of dietary cholesterol-induced atheroma in the abdominal aorta than beta-**sitosterol**. It is most likely, together with the data reported previously on rats, that the hypocholesterolemic activity of beta-**sitostanol** results from the significantly greater inhibitory effect on the intestinal absorption of cholesterol than that of beta-**sitosterol**.

L112 ANSWER 35 OF 40 CAPLUS COPYRIGHT 2000 ACS
1981:109362 Document No. 94:109362 Ergostadientriols and compositions containing them. Zilliken, Fritz W. (Z-L Ltd., USA). U.S. US 4234577 19801118, 7 pp. Cont.-in-part of U.S. 4,157,984. (English). CODEN: USXXAM. APPLICATION: US 1977-804594 19770608.

GI



I

AB Pharmaceutical compns. contg. the title compds. I (R, R1, R2, and R3 = H or OH) are antioxidants and **anticholesteremics**. Thus, in an assay on chicks to det. the effect of I on **serum cholesterol** levels, I(R = R3 = OH, R1 = R2 = H) [76420-88-7] was 10 times as active as the known .beta.-**sitosterol** in **reducing serum cholesterol**. An antioxidant compn. also contained the isoflavone 2,3-dihydro-6,7-dihydroxy-3-(p-methoxyphenyl)-4H-1-benzopyran-4-one [76397-87-0].

L112 ANSWER 36 OF 40 MEDLINE DUPLICATE 4
78020099 Document Number: 78020099. Hypocholesterolemic action of a novel delta8-dihydroabietamide derivative, THD-341, in rats. Enomoto H; Yoshikuni Y; Ozaki T; Zschocke R; Ohata K. ATHEROSCLEROSIS, (1977 Oct) 28 (2) 205-15. Journal code: 95X. ISSN: 0021-9150. Pub. country: Netherlands. Language: English.

AB The hypocholesterolemic properties of THD-341, N-(2,6-dimethylphenyl)-delta8-dihydroabietamide, were studied in rats. THD-341 **reduced serum cholesterol** levels in cholesterol-cholate-fed rats at a concentration of less than 0.001% in the diet or an oral dose of less than 3 mg/kg, once a day. When compared in terms of the 50% inhibitory dose for **serum cholesterol** elevation (ID 50%, % in diet), THD-341 (0.0008%) was comparable to D-thyroxine (0.0005%), more potent than estradiol (0.003%), and far more potent than clofibrate (0.2%), beta-**sitosterol** (0.8%), cholestyramine (2%), or

nicotinic acid (3%). A daily intravenous injection of THD-341 was also effective (ID 50%: 7 mg/kg). THD-341 **reduced** serum and liver cholesterol in rats made hypercholesterolemic by 0.3% dietary thiouracil or 0.25% dietary cholate. Liver cholesteriol was more profoundly affected than the **serum cholesterol**. In normal rats, cholesterol was **reduced** in liver but not in serum. Its mechanism of action is unknown but the results suggest that THD-341 inhibits cholesterol absorption or re-absorption.

L112 ANSWER 37 OF 40 CAPLUS COPYRIGHT 2000 ACS
1975:552376 Document No. 83:152376 **Anticholesteremic** lecithin-.beta.-**sitosterol** composition. Ritter, Kurt (Ritter, D., und Co., Ger.). Ger. Offen. DE 2400518 19750710, 6 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1974-2400518 19740107.
AB The prepn., useful for the **lowering** of **serum cholesterol** consists of lecithin and .beta.-**sitosterol** (I) [**83-46-5**] in the ratio of about 2:1. I addn. **reduces** the daily dosage, in the form of capsules or tablets, to about 1/3 of the normal required for lecithin alone, or to about 5 g to 10/day.

L112 ANSWER 38 OF 40 CAPLUS COPYRIGHT 2000 ACS
1975:491179 Document No. 83:91179 Antilipemid agent based on a soybean oil fraction. Kaneda, Takashi; Tabata, Toshikazu Ger. Offen. DE 2334652 19750130, 40 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1973-2334652 19730707.
AB An unsaponifiable fraction from soybean oil, contg. about 45% **phytosterols** about 20% tocopherols, showed oral antilipemic activity in doses (1.2-1.8 g/day) that did not cause liver or kidney damage or other toxic effects. The fraction was prepd. from deodorized soybean oil distillate by esterifying fatty acids with MeOH and removing them by mol. distillation at 170-80.degree. and 20-50 mm Hg. The fraction was mixt. with silicic anhydride, a binder, and antioxidant, and a surfactant, powd., kneaded with an organic solvent to a granulate, and encapsulated. Administration of the fraction orally in capsule at 1.2 g/day to hyperlipidemic patients decreased the **serum cholesterol** level from an av. of 260 to 225.9 mg/dl and .beta.-lipoproteins from 592.3 to 527.1 mg/dl after 2 weeks.

L112 ANSWER 39 OF 40 CAPLUS COPYRIGHT 2000 ACS
1973:79479 Document No. 78:79479 **Serum cholesterol reducing** agents. Rastogi, S. K. (G. R. Med. Coll., Gwalior, India). Curr. Med. Pract., 16(8), 333-5, 339 (English) 1972. CODEN: CMDPAW.
AB A review with 7 refs. **Serum cholesterol** [57-88-5]-**lowering** agents such as estrogens, thyroid hormones, nicotinic acid [59-67-6], atromid [8075-95-4], triparanol [78-41-1], **sitosterol** [**83-46-5**], and polyunsatd. vegetable oils are discussed.

L112 ANSWER 40 OF 40 CAPLUS COPYRIGHT 2000 ACS
1974:43793 Document No. 80:43793 Dietary factors and drugs affecting fecal sterol excretion. Forman, Donald T.; Taylor, C. Bruce (Med. Sch., Northwest. Univ., Evanston, Ill., USA). Treat. Hyperlipidemic States, 376-86. Editor(s): Casdorph, Herman Richard. Thomas: Springfield, Ill.

(English) 1971. CODEN: 27HXAF.
AB A review with 60 refs. on the **lowering** of **serum cholesterol** (I) [57-88-5] by .beta.-**sitosterol** [**83-46-5**], neomycin [1404-04-2], and hydrophilic colloids.

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